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Mountain Communities Wastewater Management Alternatives Report
Volume 4. Financial Alternatives

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This is the final volume of the Mountain Communities Wastewater Management Assessment's Alternatives Development Report. This volume contains Chapter 5 which identifies federal, state, local and private funding sources available to mountain communities and presents a fact sheet summarizing key characteristics of each applicable financial technique. Financing considerations for innovative and alternative systems are discussed, and a method for selecting the most appropriate financing technique in a given situation is presented.

KEYWORDS: *Environmental impacts, *Waste water, *Water quality management, *Sewage treatment plants.

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Mountain Communities Wastewater Management Alternatives Report

Volume IV – Financial Alternatives

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IV - ATLANTA

MOUNTAIN COMMUNITIES WASTEWATER MANAGEMENT ASSESSMENT

ALTERNATIVES REPORT
VOLUME IV

NOVEMBER 1984

VOLUME IV

TABLE OF CONTENTS

Page

LIST OF TABLES i
LIST OF FIGURES ii
INTRODUCTION iii
Chapter 5 FINANCIAL ALTERNATIVES 5-1
5.1 Introduction 5-1
5.2 Alternative Approaches To Finances 5-4
  5.2.1 Federal Funding Sources 5-4
  5.2.2 State Funding Sources 5-14
  5.2.3 Local Funding Sources 5-21
  5.2.4 Private Funding Sources 5-26
5.3 Evaluation of Alternative Financing Techniques 5-30

FACT SHEETS
BIBLIOGRAPHY
APPENDIX IV-A State 201 Construction Grant and FmHA Contacts
IV-B Financial Planning Handbook For Wastewater Management, EPA
IV-C A Guide to Financial Management For Small Utilities, National Demonstration Water Project.

2<

VOLUME IV

LIST OF TABLES

No.	Title	Page
5-1	Phases of Rural Wastewater Projects For Which Available Grant and Loan Monies May Be Utilized	5-3

VOLUME IV

LIST OF FIGURES

No.	Title	Following Page
5-1	Fact Sheet -- EPA Construction Grants	5-36
5-2	Basis For Determining Grant Eligibility As An Innovative/ Alternative (I/A) Technique	5-8
5-3	Fact Sheet -- Farmers Home Administration Grants and Loans	5-36
5-4	Fact Sheet -- Appalachian Regional Commission Grants	5-36
5-5	Fact Sheet -- Federal Economic Development Grants	5-36
5-6	Fact Sheet -- Georgia Emergency Grants	5-36
5-6	Fact Sheet -- Georgia Economic and Environmental Grants	5-36
5-8	Fact Sheet -- Georgia Environmental Facilities Loans	5-36
5-9	Fact Sheet -- Kentucky Wastewater Loans	5-36
5-10	Fact Sheet -- North Carolina Clean Water Bonds	5-36
5-11	Fact Sheet -- North Carolina One-Half Cent Sales Tax	5-36
5-12	Fact Sheet -- South Carolina Facilities Development Grants	5-36
5-13	Fact Sheet -- South Carolina Rural Water-Sewer Grants	5-36
5-14	Fact Sheet -- Tennessee Wastewater Loans	5-36
5-15	Fact Sheet -- Community Development Block Grants	5-36
5-16	Fact Sheet -- General Obligation Bonds	5-36
5-17	Fact Sheet -- Revenue Bonds	5-36
5-18	Fact Sheet -- Bond Anticipation Notes	5-36
5-19	Fact Sheet -- Short-Term Loans	5-36
5-20	Fact Sheet -- Special Assessment Bonds	5-36
5-21	Fact Sheet -- User Charges	5-36
5-22	Evaluation of Financing Techniques	5-31

(Fact Sheets located at back of Chapter 5)

4<

VOLUME IV

INTRODUCTION

This is the final volume of the Mountain Communities Wastewater Management Assessment's *Alternatives Development Report*. This volume contains Chapter 5 which identifies federal, state, local and private funding sources available to mountain communities and presents a fact sheet summarizing key characteristics of each applicable financial technique. Financing considerations for innovative and alternative systems are discussed, and a method for selecting the most appropriate financing technique in a given situation is presented.

5<

VOLUME IV

CHAPTER 5

FINANCIAL ALTERNATIVES

5.1 Introduction

This chapter of the *Alternatives Development Report* is intended to identify the variety of financial alternatives which are available to mountain communities and develop a method for selecting the most appropriate set of financial techniques for a specific community.

Small, rural communities all suffer from the same problems in obtaining funds for relief of their wastewater problems: their problems are often not of a large enough scale to qualify for Construction Grant Funds from EPA; and they do not have the financial resources to undertake their own facilities or participate in some of the loan programs which are available.

The financial setting for the study area includes:

- low per capita incomes
- low tax base
- little financial or management expertise
- decreasing federal funds.

Based upon this setting the following financial issues need to be addressed:

- identification and promotion of appropriate low cost, low maintenance technologies for rural areas,
- promotion of wastewater systems with affordable user charges,
- guidance and assistance to states in managing set-aside programs that could benefit rural areas,

- identification of ways to increase priority of small community projects within overall state/EPA water quality objectives,
- identification of available funding sources and guidance in obtaining funds from these sources.
- identification of techniques available to finance the local share of construction funding and various payment techniques for monthly user costs.

The following sections identify the federal, state, local and private financial resources which are available to small communities. Table 5-1 provides a summary of those funding sources and the various phases of a project on which they can be utilized.

7<

TABLE 5-1

PHASES OF RURAL WASTEWATER PROJECTS FOR WHICH
AVAILABLE GRANT AND LOAN MONIES MAY BE UTILIZED

Funding Source	Phase of Project				
	Planning and Permitting	Engineering and Legal Fees	Installation/ Construction	Operation and Maintenance	Administration
Federal					
EPA Construction Grants	X	X	X		X
Farmers Home Administration Grants and Loans		X	X		X
Federal Economic Development Grants		X	X		X
Regional					
Appalachian Regional Commission Grants[1]	X	X	X		X
States					
Georgia Emergency Grants		X	X		
Georgia Econ. and Enviro. Grants[1]	X	X	X		X
Georgia Enviro. Facilities Loans		X	X		
Kentucky Wastewater Loans		X	X		
North Carolina Clean Water Bonds	X	X	X		X
North Carolina One-half Cent Sales Tax	X	X	X	X	X
South Carolina Facilities Devel. Grants[2]	X	X	X		
South Carolina Rural Water-Sewer Grants		X	X		
Tennessee Wastewater Loans		X	X		
Community Development Block Grants[1]		X	X		X

[1] These sources of funding are provided primarily to promote economic development.

[2] Funds can also be utilized to help rural residents afford connection to a sewer system.

5.2 Alternative Approaches to Funding

5.2.1 Federal Funding Sources

U.S. Environmental Protection Agency

The Federal government has traditionally been the major source of funds for wastewater management projects. EPA, through its massive construction grants program has been the major source of federal funds. The EPA grant program is summarized on Figure 5-1.

The first step in the construction grants process includes facility planning activities. This is traditionally referred to as Step 1. The facility plan consists of the development and evaluation (cost effectiveness evaluation) of alternative approaches that could be used to achieve the necessary degree of pollution control, and a discussion of the economic, social and environmental costs of the alternatives. The recommended alternative must be cost-effective, environmentally sound and implementable. Following completion of the facility plan, it is submitted to the state for approval. If the plan is accepted and approved the state then certifies that the project is ready for a Step 2 grant amendment. If a Step 2 grant is awarded, the consultant proceeds with preparation of detailed engineering plans and specifications for the approved facility plan. When the plans and specifications are completed the jurisdiction submits the package to the state regulatory agency and EPA for review. If the engineering designs and specifications are accepted, the project then goes on the state's priority list for construction funds. Based on the status of available funds, construction of the facility may be months or even years away. When the project approaches the construction stage, a formal grant agreement is signed and the project is advertised for bids. Following a review of the bidding documents a contractor is selected and awarded the project.

The normal sequence of events for an EPA-funded project follows the above three-step process, though significant changes have resulted from the 1981 Clean Water Act Amendments. The major revisions resulting from the Act are:

- Grants for Steps 1 and 2 are no longer given separately; instead, allowances are included in Step 3 grants for facilities planning and design activities.
- Step 3 grant advances are possible for small communities from the state environmental agency.
- Construction grants are now available only for secondary or more stringent treatment, new interceptors and connecting sewers and infiltration/inflow corrections.
- After October 1, 1984, grants will be made to handle current needs, not to exceed year 1990 needs.
- Engineering services are required and fundable for one year after construction completion.
- Secondary treatment definition has been expanded to include oxidation ponds, lagoons, ditches and trickling filters.

The 1981 amendments authorized $2.4 billion for sewage facility construction to municipalities for fiscal years 1982-1985. Each state receives a proportional share of this authorization for funding all projects throughout the state. The total EPA fundable portion of elligible project costs is 75 percent. Beginning in fiscal year 1985 (October 1, 1984) this share will decrease to 55 percent. An additional 20% is allowed for innovative and alternative projects. Since grants do not cover needs beyond 1990 and most communities will elect to build-in some excess capacity for future growth, the actual EPA share of total project costs will even be below 55 percent.

The Clean Water Act also specified certain reserve funding amounts which further define the utilization of funds. Four to 7.5 percent must be reserved for I/A projects. In addition, states with a rural population of 25 percent or more must reserve at least four percent of its allotment for small communities to implement alternatives to conventional wastewater systems; governors of non-rural states may reserve up to four percent of its allotment for the same uses.

Federal regulations specify that establishment of priority water quality areas is left to each state, as long as federal guidelines for priority setting and water quality standards are followed. States annually develop a project priority list with one section indicating projects to be funded from the current annual allotment and a second portion listing other projects anticipated to be funded from future fund allotments. Each state submits its priority list to EPA by August 31 of each year to allow the Regional Administrator sufficient time for review prior to the beginning of the next fiscal year on October 1.

In most states similar priority rating schemes are used for large and small communities. However, the rating procedures are changing to better address those small communities without any centralized collection and treatment facilities. In Tennessee, for example, where there is a serious public health problem due to failing septic systems, priority points are determined by the following criteria:

Percentage of Septic Tanks Failing	Project Priority Point Value
50 percent or more	1.0 x HP*
30 to 49.99 percent	0.75 x HP*
0 to 29.99 percent	percentage x HP*

*HP will be the highest project priority point value shown on the 1983 fiscal year priority list of the State of Tennessee. HP shall be 83.600 PPV and will not change for this or any subsequent Fiscal Year (Tennessee Department of Health and Environment, 1983).

Following the priority rating of a particular project, the states then assemble a priority ranking list of all applicants for construction grants under the Federal Construction Grants Program. This listing is then used to allocate monies available from each state's general grant fund. In many states, only the top five or so projects are fundable in any one fiscal year. Although some added preference in rating is now being given to small community or I/A projects, as the above example from Tennessee shows, the top-ranked projects typically are not in either of these categories. Therefore, most states carry out a further prioritization for I/A and small community projects.

In most states the procedures for allocating the I/A and small community set-aside monies still rely heavily on the states' overall priority lists. In Kentucky and Georgia separate listings of I/A or small community projects are compiled but the project rankings in each list are based on the project's order on the overall priority list. North and South Carolina also base the priority order for I/A and small community projects on the overall list, but have never established actual separate listings in each category. Alabama is moving toward this approach but up to now has awarded I/A and small community funds on a largely first-come, first-served basis, though the process also considered the relative merits of the project applications being reviewed.

Priority water quality areas as specified in annual reports to Congress, called 305(b) Reports, tend to be surface waters adjacent to developed areas where most water quality monitoring activities have taken place. Water quality degradation in rural areas can continue unnoticed, particularly if groundwater, rather than surface waters, is being degraded. In addition, rural wastewater systems primarily utilize land disposal; malfunctions of land disposal techniques would tend to result first in public health rather than water quality problems.

One further factor which may limit a community's eligibility for EPA funding is the application of EPA Affordability Criteria. The 201 Affordability Analysis, as discussed in detail in Chapter 4 of the Survey of Existing Conditions Report, is included as part of the 201 Construction Grant planning process and is intended to analyze in detail the financial constraints which limit the ability of a community to finance, operate and maintain a facility. Strict applicability of these criteria may limit a community's eligibility for 201 funding.

Eligibility for Funding as an Innovative or Alternative (I/A) Technique

More Federal Construction Grant funds can be available for innovative and alternative techniques than for conventional wastewater management techniques. As much as 20 percent additional grant monies for eligible project costs can be available for I/A techniques (Federal Register, February 17, 1984).

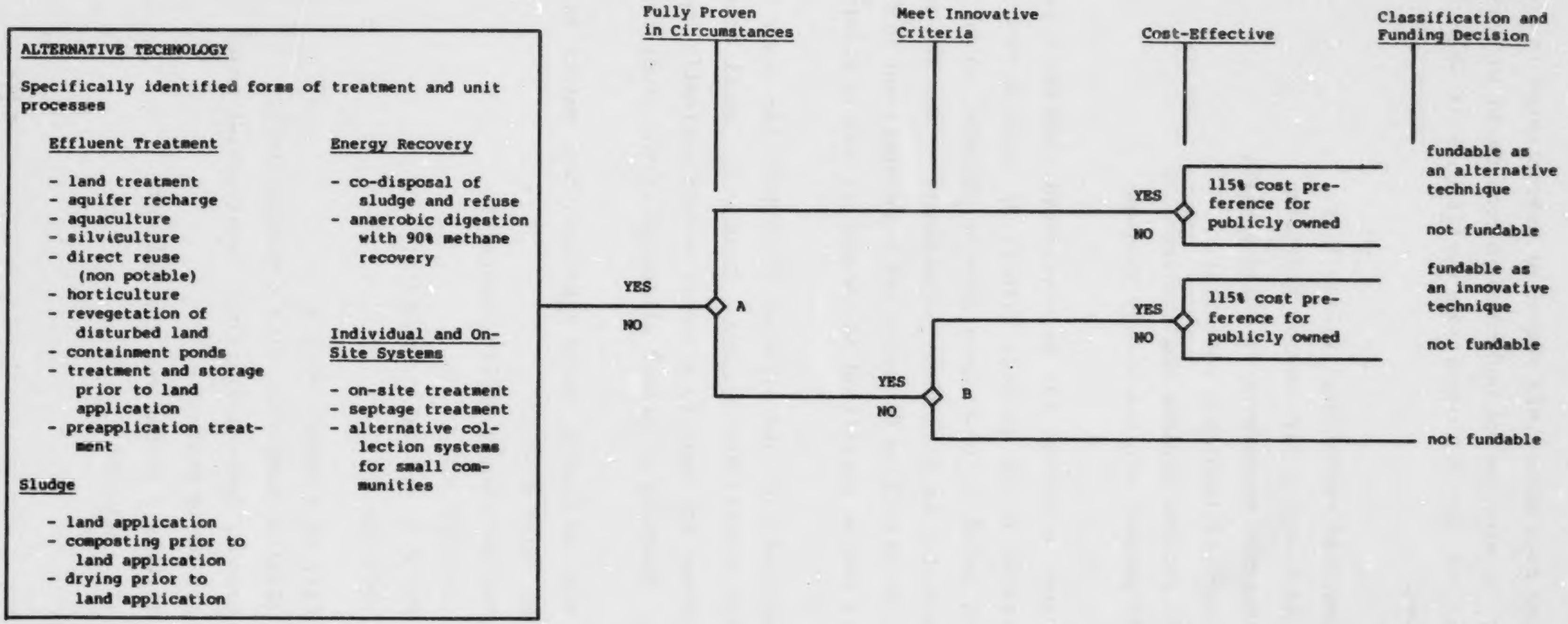
Figure 5-2 outlines the process for determining whether a technique qualifies as innovative and/or alternative. Many of the basic types of alternative techniques listed in federal regulations and shown in Figure 5-2 are presented in Chapter 3 of this report as suitable techniques for small systems. Federal guidelines list alternative on-site techniques such as septic tank-soil absorption, aerobic treatment-soil absorption, mounds, evapotranspiration beds and recycle systems. Eligible on-site units may be publicly or privately owned. Alternative collection systems include small diameter gravity, pressure and vacuum sewers for small communities or dispersed sections of large communities. If any alternative system is publicly-owned, it can be eligible for funding even if costs are as much as 15 percent greater than costs for the "cost-effective" system. Determination of cost effectiveness is based on costs, impacts, operation and implementation as discussed in Section 3.6 of this report.

Innovative techniques may not necessarily be fully proven, but the risk of their use is considered acceptable. Generally, innovative

13<

FIGURE 5-2

BASIS FOR DETERMINING GRANT ELIGIBILITY
AS AN INNOVATIVE / ALTERNATIVE (I/A) TECHNIQUE


ALTERNATIVE TECHNOLOGY
Specifically identified forms of treatment and unit processes
Effluent Treatment
- land treatment
- aquifer recharge
- aquaculture
- silviculture
- direct reuse (non potable)
- horticulture
- revegetation of disturbed land
- containment ponds
- treatment and storage prior to land application
- preapplication treatment
Sludge
- land application
- composting prior to land application
- drying prior to land application
Energy Recovery
- co-disposal of sludge and refuse
- anaerobic digestion with 90% methane recovery
Individual and On-Site Systems
- on-site treatment
- septage treatment
- alternative collection systems for small communities
Fully Proven in Circumstances
Meet Innovative Criteria
Cost-Effective
Classification and Funding Decision
YES
NO
A
YES
NO
B
YES
NO
115% cost preference for publicly owned
YES
NO
115% cost preference for publicly owned
fundable as an alternative technique
not fundable
fundable as an innovative technique
not fundable
not fundable

Source: U.S. Environmental Protection Agency, 1980 (MCD-53) techniques have been field-tested or demonstrated in a full-scale testing facility. An alternative technique is considered innovative if it meets at least one of the following six qualifications when compared to other techniques:

- improved operational reliability,
- additional environmental benefits,
- improved management of toxic wastes,
- improved treatment potential,
- 15 percent minimum cost savings, or
- 20 percent minimum energy savings.

In addition, a project can be considered innovative by the EPA Regional Administrator if the project either: a) incorporates unique design and operation based on local geography or climate, or b) public benefit is achievable due to technology advancement. The EPA Regional office in Atlanta, GA is willing to assist any grant applicant in determining whether a project can be classified as innovative and/or alternative.

Municipalities and agencies throughout the study area have received grants for centralized systems. Grants for small communities and other small systems are made to a lesser extent currently than for centralized systems. Examples of grants allocated in the study area include:

- Madison County, North Carolina Clean Waters Project
  Mr. Mike Bradley
  Madison County Health Department
  (704)649-3531 or
  Mr. F.R. Schutz (Consultant)
  (704)258-2384
- City of Vienna, Georgia
  (Stanley Gambrell, City Administrator)
  Lagoon, Spray irrigation: Construction phase
  Mr. David Battson
  Tribble & Richardson (Consultant)
  (912)742-7395

15<

State 201 contacts are listed in Appendix IV-A.

U. S. Farmers Home Administration

The Farmers Home Administration (FmHA) program for water and wastewater disposal systems is targeted for rural areas. Under this program both grants and loans are available. However the grant program has relatively strict eligilitity criteria and only had $90 million available nationwide during fiscal year 1984.

FmHA's loan program is much more attractive since the eligibility requirements are not as strict as for FmHA grants, and there are more funds available ($270 million - FY 84). However, these loans must generally be repaid over a forty year period. Current interest rates for these loans (May 1984) are 9.625%. There is a 5 percent interest rate available if the community can qualify.

For both the grant and loan program, FmHA allocates money to each individual state. The amount to each state varies, based on population and number of households below the poverty level. Each community must apply for a grant or loan at the state level (See Appendix IV-A for a list of State FmHA contacts). The state prioritizes applications based on a priority ranking system set forth in federal guidelines. The priority system has three major categories:

- population
- existence of present health hazard (and extent)
- income

Points awarded vary within each category, e.g. the smaller the community, the greater the number of points awarded; the same holds true for communities with low median family incomes.

Other factors for which points are awarded include:

- merging of two or more small facilities,
- enlargement or extension of existing facility,
- public body, Indian tribe or truly rural area,
- private sector financing.

FmHA loan and grant monies are available to solve wastewater problems of both on-site systems and centralized systems.

Funding for FY-84 Water and Sewer projects in study area states was:

	Loan	Grants
AL	$ 6,921,000	$ 2,261,000
GA	8,631,000	2,785,000
KY	8,078,000	2,615,000
NC	11,926,000	3,794,000
SC	6,015,000	1,984,000
TN	7,816,000	2,535,000
Total	$49,387,000	$15,974,000

One example of an FmHA loan (for sewer work) recipient is:

City of Barbourville
Knox County, Kentucky
Charlie Buchanan, Mayor
(606)546-4171

Appendix IV-A lists State FmHA loan/grant contacts.

Figure 5-3 presents a summary of further information on this program.

Appalachian Regional Commission

The Appalachian Regional Commission (ARC) provides supplemental grant funds for infrastructure projects. However, all of their grants are tied into job creation. Simply stated, if a project does not create jobs, it will not be funded. This generally rules out residential projects unless the potential grantee can demonstrate that the wastewater facilities could result in economic growth. Furthermore, ARC will not participate until another federal program is involved such as EPA or FmHA. Therefore, the EPA or FmHA grant would need to be in place before any ARC funding was available. ARC funding is also limited. The allocation to the six states in this mountain communities study area totals only $16,869,000 in FY 84 for all infrastructure projects.

ARC allocates funds to the 13 Appalachian states (including study area states) based on a formula which, in turn, is based on the following (among other considerations):

- population
- housing
- income.

Each state receives grant applications and submits an investment package outlining each project once a year (generally in the fall) to ARC. ARC then determines whether or not federal rules and regulations are met and assures that state and federal priorities are met. Each individual state makes the final grant determination based on their own guidelines.

One ARC grant recipient in 1982 was Stanford, Kentucky. Stanford received the funds for sewage system improvements. A contact is:

James Harris, Mayor
Stanford, Kentucky 40484
(502)365-7322

The ARC funding program is summarized on Figure 5-4.

U. S. Economic Development Administration

The Economic Development Administration (EDA) in the Department of Commerce also provides wastewater funding, but again, it is related only to economic development projects. The goal of the program is to assist economically-distressed areas through provision of funds for a project which will result in job creation and economic development. Funds are not intended for residential use. With regards to sewage systems, EDA participates only (with few exceptions) on those projects related to industrial/commercial sewage facilities, and these are generally centralized systems.

An EDA representative is located in each study area state. An applicant must first approach their representative to discuss a potential project. A "profile", which includes preliminary project information, is forwarded to the respective regional office (for the study area, this office is in Atlanta). The package is studied by a Review Committee which bases a recommendation on various criteria set forth in federal regulations. The grantee must then submit a formal application to EDA, Washington D.C. Authorization for funding is made in Washington. The amount of the grant is dependent on a number of factors, including (but not limited to):

- extent of area distress,
- unemployment
- income.

Funds are allocated on a project-by-project basis. For FY 84 (ends September 30, 1984) $170 million was allocated; $34.4 million of this was allocated to the Atlanta Regional Office.

Several communities in the study area have received EDA grant monies for a portion of a sewage facility project related to the needs of industry. These include:

- City of Conover,
  Catawba County, NC
- City of Lynchburg,
  Moore County, SC

In Thomson, Georgia, McDuffie County, an EDA grant was awarded for extension of sewer service to an industrial park. All were 1983 grants. A contact for these projects is:

Mr. William J. Day, Regional Director
Economic Development Administration
1365 Peachtree Street, NE
Suite 750
Atlanta, GA 30309
(707)881-7401

EDA Funding is further described on Figure 5-5.

Funds are available from the Department of Housing and Urban Development (HUD) through the Community Development Block Grant (CDBG) program. CDBG funding is allocated to the states for their use and will be treated under the discussion of state funding sources.

5.2.2 State Funding Sources

All of the states in the study area except Alabama have some type of grant or loan program for wastewater facilities. Most of these programs provide funds to cover part of the local costs to communities which have received a Federal grant for wastewater facilities.

Georgia

Georgia has three different programs. The Emergency Grant Program is available in instances of emergency rehabilitation or replacement. There are several eligibility requirements which must be met before a grant can be awarded. These are:

- facility must be government-(county, city, authority) owned,
- need for repairs/addition must be immediate due to failure in system or destruction by natural disaster (must be documented),

- failure in system must contribute to actual or potential public health problem or violate water quality standard.

The state (through the Emergency Grant Program) will provide up to 50 percent of the eligible portion of the engineering and construction costs for a project. This 50 percent requirement can be waived by the director of the Georgia Environmental Protection Division and up to 100 percent of necessary funds can be provided in instances where the maximum contaminant level for drinking water standards has been violated by a primary contaminant. A primary contaminant is one which cannot be controlled by the normal filtering process or by chemical injection (e.g. radiation or chloride).

Grants are allocated under this program on a priority ranking system basis. Several areas provide points, including (but not limited to):

- existing public health hazard,
- stream classification,
- engineering plans complete,
- local financing plans complete,
- inadequacy of collection system.

There are no state limitations placed on grant receipt. Funds may be provided if eligibility requirements are met and as long as the community provides matching funds (federal) by other than EPA.

The City of Clayton in Rabun County is an example of a community which received an emergency grant for correction of sewer line problems due to flooding. A contact is:

- City of Clayton, Georgia
  Paul Buchanan, Mayor
  (404)782-4512

Georgia's Economic and Environmental Grant Program is only available for economic development. This program is managed similarly to the Emergency Grant Program. Again, the applicant must provide 50 percent of non-state funds, excluding EPA funds. Also, applications are rated on a priority point system similar to that described for the Emergency Grant Program. The priority point system for this program, however, has a few special points based on industry-committment (e.g. federal facility, private industry, etc.). Recent grant recipients include:

- St. Mary's, GA
  Camden County
  Office of the Mayor
  (919)882-5516
  for: sewer & water improvements due to military base build-up.
- Calhoun, GA
  Gordon County
  Office of the Mayor
  (404)629-0151
  for: upgrade treatment plant; sewer & water service to an industrial park.

On July 1, 1984 the state began an Environmental Facility Financing Program to provide loans for sewer and water projects. Allocation will be on a first come-first serve basis. For more information on this program, contact Mr. Henry M. Huckaby or Mr. W. Ross King at the Georgia Development Authority in Atlanta, GA (404)894-6044. Fact sheets outlining the available Georgia funding programs are presented on Figures 5-6 through 5-8.

Kentucky

Kentucky currently has a Loan Program for wastewater facilities. The program is targeted for small communities who need financial assistance with their wastewater projects. Funds from this program are allocated on a project-by-project basis. The community must verify that their revenue stream is sufficient for repayment. If applications from small com-

22<

munities for this type of loan do not accumulate to warrant issuance of a bond, then only some interim financing is available. Augusta, Albany and Inez, Kentucky are examples of communities which have received interim financing.

The following are examples of communities/entities which have received a wastewater loan:

- Alexandria, KY
  Campbell County
  Roger Steffen, Mayor
  400 W. Main Street 41001
  (502)635-4125 (City Hall)

- Cold Springs, KY
  Walter Koch, City Treasurer
  29 E. Alexandria Pike 41076
  (502)441-9604 (City Hall)

Figure 5-9 summarizes the Loan Program.

North Carolina

North Carolina has a Clean Water Bond which has been very helpful in providing part of the local share to Federal grant recipients. Nevertheless, the Clean Water Bond program is utilized for construction of wastewater treatment works and interceptors. The potential recipient must have a federal grant before applying for a Clean Water Bond. The Bond program will fund 25 percent of the non-federal share or 1/2 of the non-federal share, whichever is less.

Communities applying for a Clean Water Bond are rated according to a priority ranking system. This system assigns points based on a number of criteria including, but not limited to, the following:

- stream classification,
- sewer use ordinance in effect,

23<

- water conservation measures in effect,
- continuing I/I Program,
- public education,
- financial need of community based on:
  - existing debt,
  - added debt (from facility),
  - property evaluation.

In the past, although communities were rated, grants were allocated on a first come-first serve basis because of fund availability. When grant funds become relatively low, the rating system takes effect.

Grants are considered every quarter (four times per year). One eligibility limitation is that a community can only receive a grant which is less than eight percent of its assessed value.

Numerous grants for sewer facility work have been awarded throughout the state through the Clean Water Bond process. One example is:

Burnsville, N.C.
Ronald Dayton, Mayor
(704)682-2420

Unfortunately, the Clean Water Bond program expired in 1984. It was, however, replaced by the One-Half Cent Sales Tax program. The recently enacted sales tax program is administered at the county level and provides funds for local communities in wastewater construction and operation and maintenance (among other areas). Forty (40) percent of revenues gained are slated for sewer work. However, in the mountainous areas of western North Carolina it is expected that revenues will be very small (due to county size and relative income) and should have little impact. In addition, it should be noted that it is each county's prerogative to implement the tax. Buncombe County recently implemented the sales tax. The Clean Water Bond and sales tax revenue programs are summarized on Figures 5-10 and 5-11.

South Carolina

South Carolina has a Rural Community Facilities Development Grants program which is targeted towards the study and construction of wastewater facilities. Funds are allocated on a first come-first serve basis by the

24<

Office of the Governor, Division of Rural Improvement. Small towns and cities, local water companies and non-profit organizations must serve a population of 5,000 or less to be eligible for a grant. Grants ranging from $500 to $10,000 are allocated for use in three ways:

- perform engineering/feasibility studies,
- assist lower-income residents in paying tap on fees,
- to leverage financing from other sources (includes cost of construction).

There are no state limitations placed on grant receipt. Funds for FY 84 have been exhausted; the administrating agency has applied for a continuation; a decision is expected by mid-August 1984.

The town of Heath Springs received a grant to conduct a feasibility study of alternatives to correct a sewer system problem. The town of Heath Springs is located in Lancaster County, South Carolina. A contact is:

Warren Mackey, Mayor
P.O. Box 68
Heath Springs

South Carolina also has a rural water and sewer program which provides grants to small communities for sewer and water projects. The program has only appropriated $130,000 annually and funds have been used primarily for water supply projects. Figures 5-12 and 5-13 summarize both of these programs.

Tennessee

Tennessee has a loan program for wastewater projects. This program provides low interest loans for wastewater projects which are eligible for Federal grants. There are no limitations on grant receipt. Eligibility is based strictly on the tax-shared capacity of the community. The loan amount cannot exceed the amount of state-shared taxes for 30 years at 13 percent. There is no priority ranking system; loans are administered on a first come-first serve basis.

Numerous communities throughout the Tennessee study area have applied for and received a wastewater loan, including Oakridge, Tennessee in Anderson County. A contact is:

Ms. Deborah Rosen
(615) 483-5671

Mr. David Morris is the City Administrator. Other recipients include:

- Morristown, TN
- Jefferson City, TN
- Johnson City, TN

A fact sheet describing this program is included as Figure 5-14.

Community Development Block Grants (CDBG)

The CDBG program is a HUD-supported program which provides funds for state governments to utilize for community projects. The so-called non-entitlement funds are directed toward projects in small communities such as public facilities, housing and commercial revitalization. Funds are also available for sewer projects. Each state administers their own grants within Federal guidelines. Funds are available on an annual basis and are granted on a competitive basis.

The Town of Heath Springs, South Carolina received a CDBG grant for (community) revitalization of its sewer system. A contact is:

Warren Mackey, Mayor
P.O. Box 68
Heath Springs, S.C.

Other agencies which have received CDBG funds include:

Madison County, North Carolina Housing Authority
Mr. Sam Parker
(704) 649-2788

Avery County, North Carolina Housing Department
Mr. Charles VonCannon
County Commissioner
County Court House
Newland, N.C. 28657
(704)733-2900

Figure 5-15 further summarizes the CDBG Program.

5.2.3 Local Funding Sources

Wastewater facilities in mountain communities can be funded in part or totally by the use of local funding resources. Traditionally, these types of funding sources have been utilized to either match any federal grants or to totally finance wastewater facilities if there are no federal or state funds available.

Several mechanisms exist for financing the capital costs of new wastewater systems and improvements to existing wastewater systems. The traditional method of securing capital funds has been to sell a straight debt obligation with a fixed maturity and fixed rate of interest. With this approach the borrower (community) has the security and benefit of a known payment schedule and amount. The lender (bond holder) is repaid for his investment through scheduled interest payments which compensate for the use of the money, and for assuming the market risk (changes in interest rates) and credit risk (possibility of borrower not honoring interest or principal in full or on time). Conventional municipal securities of this type are divided into two broad categories, classified by the type of security--general obligations which are secured by the full faith and credit (taxing power) of a government, and revenue or special fund obligations which are secured by revenues or receipts from a special fund or project.

Municipal securities are further classified by the time extent of the debt the issuer incurs. Bonds are long-term obligations which mature in one year or longer. Bonds are the primary technique used to finance long-term capital investment. Notes are short-term obligations with a maximum maturity of one year or less. Typical notes would include tax or revenue anticipation notes and bond anticipation notes. As the names imply, these techniques are used to secure short-term financing to smooth out differences in cash flow between revenues and expenditures. Various types of municipal securities which are available to finance the capital cost of wastewater systems are summarized on Fact Sheets appearing as Figures 5-16 through 5-19.

In some states there are legal limitations and guidelines which affect the extent of local indebtedness and use of the different types of securities. Many states impose a ceiling on bonded debt and often require voter approval prior to issuing bonds. Frequently the total amount of general obligation bonds that may be issued, for all purposes, is limited to a stated percentage of total assessed valuation of taxable property. Often short-term borrowing is restricted to "working capital" needs.

The procedures involved in issuing bonds are fairly complex and usually require the assistance of a bonding attorney. Typically a new bond issue is purchased (underwritten) by a bond dealer and then sold to investors. Most states require general obligation municipal bonds to be sold for the lowest interest cost at a public competitive bidding. Many revenue bond issues are sold in the same manner.

The availability of bond funds and the terms of their sale depend on the supply and demand of the bond market, the size and fiscal security of the project being funded and the fiscal health of the community. Typically, higher interest payments will be required when the bond market is poor, or when the size of a project in relation to a community's fiscal capabilities is not in proportion. Revenue bonds typically carry a higher interest rate than general obligation bonds because there is a greater risk of payments not being met (Peterson and Hough, 1983).

When the investment community evaluates a municipality's ability to meet bond payments, a number of factors are evaluated (Moak and Hillhouse, 1975):

- net direct and overlapping tax-supported debt per capita,
- percentage of current property tax delinquency,
- percentage of debt service on tax-supported debt to total revenues of the community's operating budget,
- average life of existing tax-supported debt in terms of general obligation bonds,
- the ratio of projected revenues to the total annual debt service,
- the ratio of the depreciated value of the community's revenue producing facilities to the outstanding (remaining) bonded indebtedness of the facilities.

Other factors can also indicate municipal fiscal capability including the diversity of income-generating sources in a community and its past experience with bonded indebtedness. It is more difficult for a community that has never incurred such debts to secure financing than those communities whose past performance can be judged. Dependence on one major industry or company may be a liability because of the possibility of the plant closing or a labor strike. Favorable growth prospects in terms of system users and income is viewed as a positive factor. Finally, the degree of public support after the public is informed of the costs for the undertaking of a wastewater facilities project can serve as an indicator of the users' willingness to pay for the facilities once they are constructed (Moak and Hillhouse, 1975).

Some special purpose districts face more problems in securing financing than do cities, towns, and counties. Newly established special purpose districts that do not have property taxing authority will have difficulty raising funds to meet capital costs. These districts also will not be able to issue general obligation bonds and will have to pay a higher rate of interest on debt. New districts, whether or not they have taxing authority, will have no record to prove how reliably they discharge their debts. New districts are, therefore, likely to face higher interest rates (U.S. EPA, 1983).

Operation and maintenance costs as well as capital costs must be considered in evaluating the community's ability to pay for wastewater facilities. Wastewater facilities with high capital costs may strain the debt-carrying capacity of the community and may prevent the community from using bonds to pay for other needs such as schools and hospitals. High operation and maintenance costs associated with other alternatives will not strain the community's debt capacity but may place an excessive burden on lower income users and reduce their willingness to pay for the facilities (U.S. EPA, 1983).

Because of the relative fiscal weakness of many small mountain communities when evaluated against such factors, few study area small towns have utilized municipal securities to fund large-scale capital projects. Another factor may be that rates for loans from other funding sources such as the Farmers Home Administration may be less than the costs to raise funds through bond issues. Larger communities with greater revenue bases are more likely to have made use of municipal bonds for capital financing.

In addition to conventional sources of funds for capital projects, a wide range of "creative" capital financing alternatives have also recently begun to be used. Most of these creative financing approaches represent methods for altering the traditional relationships between borrower and lender. Among the alterations which have been used in the effort to develop new financing instruments are (Petersen and Hough, 1983):

- shifting the interest-rate risk from investor to borrower,
- enhancing the creditworthiness of borrowers by shifting credit-related risks to third parties (loan guarantees),

30<

- increasing the types of returns available to investors beyond those available from the regular receipt of interest income payments,
- designing instruments so that they appeal to the specialized needs and requirements of certain investor groups.

An important aspect of creative financing has been to enhance the variety of economic returns to investors, such as the design of transactions in which governments are able to transfer certain tax benefits of ownership (that they themselves as non-taxpaying entities are not able to enjoy) to taxpaying entities that can use them for tax shelter purposes. This is one of the central aspects of most "privatization" techniques which are discussed in the following section of the report.

Adequate revenue generation is also required for annual operation and maintenance costs as well as for debt service, replacement and administrative expenses. Sources of revenue available to authorities and municipalities include general tax revenue, special assessments, user charges, connection charges and sewer rentals. The application of user charges and special assessments are further described on Figures 5-20 and 5-21.

Debt service is provided from the source determined by the type of bond issue--general tax revenues for general obligation bonds, and special assessments or service charges for revenue bonds. Operation and maintenance costs, however, are typically covered through user charges. Generally, a community will use taxes to support O&M costs only as a last resort.

If the project receives EPA Construction Grant funds, O&M costs must be allocated on the basis of each user's proportionate use of the system. In the case of on-site technologies, some operation and maintenance costs may be paid by users directly to private contractors such as septic tank pumpers and haulers. Operation and maintenance costs which are incurred by a public agency, however, must be recovered from users. Construction Grant regulations specify two methods for recovering these costs: (1) actual use and (2) ad valorem taxes. Many rural communities may not utilize ad valorem taxes, so this choice may not be available. With the actual use method, each user or user group pays its proportionate share of operation and maintenance (EPA, 1983).

Proportionate share as implied by Construction Grant regulations is based on wastewater loading which would encompass flow and strength. However, most costs of operating on-site and small scale treatment facilities are related to services required, therefore, to type of treatment facilities, site conditions and system age as well as wastewater loading. A user charge system which keys on allocating costs of services instead of wastewater characteristics, moreover, would better satisfy the stated goal of the regulations: "...that each user which discharges pollutants to the system that cause an increase in the cost of managing the effluent or sludge from the treatment works shall pay for such increased cost" (EPA, 1983).

5.2.4 Private Funding Sources

There are few sources of private funding for wastewater facilties. As mentioned in the previous section, there are short-term loans available from commercial banks, but these cannot usually be regarded as regular sources of funds since interest rates may be very high.

The major source of private investment in wastewater systems comes from the private developers and partnerships who construct extensions to the existing wastewater system to service their developments. In this manner, the wastewater collection system is continually expanded at no construction cost to the local municipality. The system is generally turned over to the municipality which then becomes responsible for all operations and maintenance.

Another trend that is slowly starting in the United States is the private ownership and operation of wastewater treatment facilities, called privatization. Privatization involves private sector investment in construction and operation of both large and small wastewater management facilities. In some instances, companies are constructing and operating new facilities and, in others, taking over existing facilities for operation purposes.

The advantages of private sector involvement in the funding of wastewater facilities include:

- investment tax credits,
- accelerated depreciation on facilities,
- establishment of long-term operation and maintenance contracts.

Private financing of facilities differs substantially from the traditional municipal approach to facilities financing. Privatization projects rely on the tax-exempt revenue bond market to raise the debt necessary for construction of facilities. In the early planning stages of a privatization package, financial structuring must be studied in order to determine whether or not equity is required. Present privatization packages essentially follow one of two concepts:

- lease development
- limited-partnership development.

Small-scale facilities, such as those required by small communities, would probably be fashioned around the limited partnership concept for they are typically characterized by lower cash payouts and shorter bond terms.

In addition to financing construction of new facilities, the privatization concept involving public/private partnerships appears to have merit for potential repair, expansion or rehabilitation efforts of older sewage systems in the larger study area cities. Sewage facilities which serve major industry provide a good opportunity for the development of privatization partnerships, assisting both the industrial sector and nearby municipal customers. In fact, many of the early wastewater treatment facilities in the U.S. were constructed, owned and operated by industrial groups who would later provide wastewater management services to nearby residences.

Although privatization is a relatively recent development for provision of wastewater services, it has been used fairly extensively for provision of other services. Solid waste management services have been successfully operated under this concept since 1975. Additionally, similar arrangements exist in many municipalities for contractual provision of garbage collection, municipal engineering services, park maintenance and street and parking lot cleaning. These examples illustrate that private/public partnerships frequently result in the lowest cost to service users as evidenced by more and more municipalities awarding contracts to the private sector.

Although privatization has not been used to any extent for wastewater management in the study area, it has been used for that purpose in other small communities throughout the country. The limited-partnership privatization concept was recently implemented in a semi-rural community in southeastern Pennsylvania. In this situation, privatization will allow for construction of new wastewater collection, conveyance and treatment facilities specifically tailored to meet the needs of 600 existing, local customers. The Limerick, Pennsylvania project proposed by BCM Eastern, Inc. attempted to achieve the following goals:

- A collection system scaled down to serve only the most critical and most populated areas,
- Use of a pre-engineered wastewater treatment plant with only essential facilities--no locker rooms, meeting rooms, etc.,
- Use of Modular plant construction,
- The negotiation of construction contracts with qualified contractors for a fixed, reasonable price (no extras),
- The elimination of "red tape" by avoiding federal programs (Swavely, 1984).

This project is slated for a July 1984 construction start.

Privatization of wastewater management services is also currently occurring to some extent in large vacation/resort areas where developers have constructed utilities for their facilities. Similar projects exist with other, smaller developers such as mobile home parks. Here the developer is responsible for the construction, operation and maintenance of sewage facilities according to conditions specified in the NPDES Permit.

Although most of the preceding discussion has focused on privatization as a means of funding a centralized facility, privatization of on-site systems should not be overlooked. Ownership, operation and maintenance of on-site systems by a septic tank installation company, for instance, may be possible. Recent evaluations show that it may be a profitable undertaking under certain conditions. Research in the study area has not identified any such approach as having been implemented to-date. It is considered a feasible, yet relatively complex, privatization approach.

It remains to be seen if privatization of wastewater facilities, whether centralized or on-site, will become a widespread trend throughout the country.

5.3 Evaluation of Alternative Financing Techniques

Based upon the federal and state funds which are available, each local community, district or authority (hereafter called a community), must evaluate which funding source(s) is best for its needs. This financial evaluation process basically determines the community's eligibility for funds, availability of funds and the community's overall financial health.

A flow diagram (Figure 5-22) has been developed which documents the steps required to evaluate the available source(s) of funds for a community. They include the following steps:

- determine type and cost of project,
- determine financial capability of community,
- review federal/state grant and loan options,
- review local financing options,
- select loan or grant program,

  Criteria: Eligibility
  Debt requirements
  Type of Project
  Local financing requirements
  Local revenue requirements
- review costs/benefits of project with loans or grants,
- scale down project or maintain original project,
- design and construct project.

To assist in the evaluation process, worksheets have been developed. The process of completing the worksheets should provide a good understanding of the funds which are available, a community's eligibility for funds and a community's financial status. An evaluation of the completed worksheets; should reveal the direction in which the community can move to obtain funding for their particular project. The worksheets are divided into the following components:

- Applicant Information
- Description of Proposed Facility,
- Projected Facility Costs,
- Community Debt History,
- Community Financial Conditions,
- Available Grant or Loan (Federal) programs,
- Available Grant or Loan (State) programs,
- Local Financing Requirements,
- Revenue Generation.

This chapter has identified a number of alternatives available to small mountain communities for financing a wastewater collection/treatment/ disposal system. These include finances at the federal, state, local and private level.

The U.S. Environmental Protection Agency at the federal level has been the major source of funds for wastewater projects through its construction grants program. The Farmers Home Administration, the Appalachian Regional Commission and the U.S. Economic Development Administration also have federal funds available for small community wastewater projects.

All of the study area states (except Alabama) have either a grant or loan program (or both) for wastewater facilities. For the most part, these programs provide funds to cover part of the local costs to communities which have received a federal grant for wastewater facilities.

Traditionally, funding sources at the local level have been used to either match a federal grant or to totally finance a wastewater facility. Mechanisms which exist for financing new systems or improving existing systems include:

- general obligation bonds,
- revenue bonds,
- bond anticipation notes,
- short-term bank loans.

EVALUATION OF FINANCING TECHNIQUES

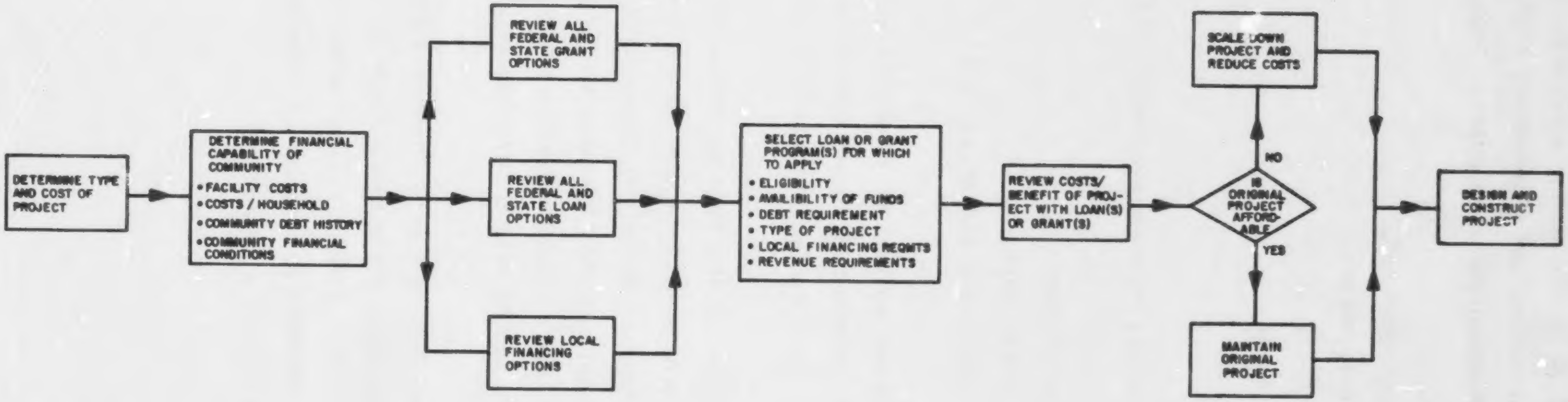

DETERMINE TYPE AND COST OF PROJECT
DETERMINE FINANCIAL CAPABILITY OF COMMUNITY
• FACILITY COSTS
• COSTS / HOUSEHOLD
• COMMUNITY DEBT HISTORY
• COMMUNITY FINANCIAL CONDITIONS
REVIEW ALL FEDERAL AND STATE GRANT OPTIONS
REVIEW ALL FEDERAL AND STATE LOAN OPTIONS
REVIEW LOCAL FINANCING OPTIONS
SELECT LOAN OR GRANT PROGRAM(S) FOR WHICH TO APPLY
• ELIGIBILITY
• AVAILIBILITY OF FUNDS
• DEBT REQUIREMENT
• TYPE OF PROJECT
• LOCAL FINANCING REQMTS
• REVENUE REQUIREMENTS
REVIEW COSTS/BENEFIT OF PROJECT WITH LOAN(S) OR GRANT(S)
IS ORIGINAL PROJECT AFFORDABLE
NO
YES
SCALE DOWN PROJECT AND REDUCE COSTS
MAINTAIN ORIGINAL PROJECT
DESIGN AND CONSTRUCT PROJECT

FIGURE 5-22

Additionally, a community will also need to generate revenue for annual system operation and maintenance costs as well as for debt service, replacement and administrative costs. Sources of revenue can include:

- special assessments,
- connection charges,
- tapping fees,
- sewer rentals,
- taxes.

Private funding sources available include:

- short-term loans,
- private developers,
- private ownership and operation.

Since none of these mechanisms (possibly with the exception of short-term loans) has been implemented to any degree in the study area, it remains to be seen whether they can be successfully utilized.

The selection of the type of financial alternative most suited to a particular community will depend upon a number of factors including the community's financial health or capability, the availability of federal/state/local funds, and the community's eligibility for such funds. Once an evaluation of these considerations is made, the community can then proceed to obtain funds in the method revealed as most suitable to its situation.

Appendices IV-B and IV-C contain a Financial Planning Handbook for Wastewater Management (EPA) and A Guide to Financial Management for Small Utilities (National Demonstration Water Project), respectively. These documents are intended as samples of community guides for selection of an appropriate financial alternative.

FINANCING TECHNIQUES EVALUATION WORKSHEET

APPLICANT INFORMATION

Name ______________________________

Address ______________________________

City ______________________ Zip ____________

Contact Person ______________________________

Telephone ________________

DESCRIPTION OF PROPOSED FACILITY

Type of Facility ☐ New ☐ Expansion ☐ Upgrade
☐ Conventional ☐ Innovative/Alternative

Briefly Describe Proposed Facility

____

____

____

Service Area ☐ County ☐ Municipality
☐ Sewer District or Authority ☐ Other

Design Population ____________ Corresponding Year __________

PROJECTED FACILITY COSTS

(1) Construction Costs $__________

(2) Engineering, Contingency and Any Other Non-Construction Project Costs $__________

(3) Anticipated Annual Debt Service $__________

(4) Annual Operation, Maintenance and Replacement Costs $__________

Total Annual Costs (3) + (4) $__________

Interest Rate __________

Years of Payback __________

FINANCING TECHNIQUES EVALUATION WORKSHEET, PAGE 2

COMMUNITY DEBT HISTORY

Bond Ratings

General Obligation Bonds ________

Revenue Bonds ________

Existing Debt	Type	Project

Debt Limit ________ Percent of Total Limitation ________

COMMUNITY FINANCIAL CONDITION

Population ________

Average Per Capita Income ________

Property Taxes Collected ________

Market Value of Real Property ________

Existing Debt ________

AVAILABLE GRANT OR LOAN PROGRAM(S)

Federal

Agency(ies) 1)________ ☐ Grant ☐ Loan

2)________

Program(s) 1)________

2)________

Contact(s)

Name 1)________ 2)________

Address 1)________ 2)________

Phone No. 1)________ 2)________

41

FINANCING TECHNIQUES EVALUATION WORKSHEET, PAGE 3

Eligibility Requirements

1)

2)

Funds and/or Interest Rate Available

1)__________________
2)__________________

AVAILABLE GRANT OR LOAN PROGRAM(S)

State

Agency(ies) 1)______________ ☐ Grant ☐ Loan
2)______________

Program(s) 1)______________
2)______________

Contact(s)
Name 1)__________________________ 2)__________________________
Address 1)__________________________ 2)__________________________
Phone No. 1)__________________________ 2)__________________________

Eligibility Requirements

1)

2)

Funds and/or Interest Rate Available

1)__________________
2)__________________

FINANCING TECHNIQUES EVALUATION WORKSHEET, PAGE 4

LOCAL FINANCING REQUIREMENTS

Amount of Financing Required $_______________

Sources of Financing:	Amount	Interest Rate	Terms of Maturity	Annual Debt Service Payment
General Obligation Bond				
Revenue Bond				
Loan				

REVENUE GENERATION

Annual Revenue Requirements ____________

Sources of Revenues:

Sewer Rentals ____________

Tapping Fees ____________

Connection Charges ____________

Special Assessment ____________

MOUNTAIN COMMUNITIES
WASTEWATER MANAGEMENT
ASSESSMENT

ALTERNATIVES
DEVELOPMENT REPORT

44<

FACT SHEET
FINANCIAL
ALTERNATIVES

Figure 5-1

EPA Construction Grants

FUNDING PROGRAM AND AGENCY

Construction Grants for Wastewater Treatment Works
Office of Water Program Operations
U.S. Environmental Protection Agency
Washington, DC 20460

PROGRAM OBJECTIVES

To assist and serve as an incentive in construction of municipal wastewater treatment works.

ELIGIBILITY REQUIREMENTS

Any municipality, intermunicipal agency, state, or interstate agency or Federally recognized Indian tribal government having jurisdiction over waste disposal is potentially eligible.

Grant-eligible costs are those to correct existing problems. Privately-owned systems must have been in existence as of December 27, 1977 to be eligible. Financial capability, adequate OMR budget and an approved user charge system are other requirements.

ADMINISTRATIVE REQUIREMENTS

Certified copy of authorization from applicants governing body

Current description of project

Consideration of other Federal funds which may be used to finance the project

Applicant assurance that discharge permit has been or will be obtained

☒ GRANT ☐ LOAN

USE OF FUNDS

For planning, design and construction of municipal wastewater treatment works, 75% funding of eligible project costs for conventional technologies and 85% funding for innovative or alternative technologies is available until October 1, 1984.

LIMITING FACTORS

Effective October 1, 1984, the Federal share may decrease to 55% of eligible project costs at the discretion of each State. Planning and design will be funded as a percentage allowance based on total construction cost.

EXAMPLES

Madison County, N.C. Clean Waters Project
Mr. Mike Bradley
Madison County Health Department
(704)649-3531 or
Mr. F. R. Schutz (Consultant)
(704)258-2384
City of Vienna, GA (Stanley Gambrell, City Administrator)
Lagoon, spray irrigation: Construction phase
David Battson
Tribble & Richardson (Consultant)
(912)742-7395

CONTACTS

Program #66.418 - Construction Grants for Wastewater Treatment Works, 1983 Catalogue of Federal Domestic Assistance, OMB, Washington, D.C.

Mr. William Kramer, U.S. EPA, Office of Water Program Operations, Washington, D.C. (phone: (202) 382-7277)

Water Division, U.S. EPA, Atlanta, GA

For State 201 contacts, See Appendix IV-A.

MOUNTAIN COMMUNITIES
WASTEWATER MANAGEMENT
ASSESSMENT

ALTERNATIVES
DEVELOPMENT REPORT

46<

FACT SHEET
FINANCIAL
ALTERNATIVES

Figure 5-3

Farmers Home Administration Grants and Loans

FUNDING PROGRAM AND AGENCY

Water and Waste Disposal Systems for Rural Communities
Farmers Home Administration
U.S. Department of Agriculture
Washington, DC

PROGRAM OBJECTIVES

To alleviate health hazards and promote the orderly growth of rural areas.

ELIGIBILITY REQUIREMENTS

Municipalities, counties, districts and authorities, associations, cooperatives, corporations operated on a not-for-profit basis, and Indian tribes are potentially eligible. Service area should not include an area with greater than 10,000 inhabitants.

Grants available only to communities with incomes below 85% of the non-metropolitan state median family income. Loan available to other applicants not qualifying for a grant.

ADMINISTRATIVE REQUIREMENTS

Grants available up to 75% of eligible costs

Loans available for 100% of project costs

Terms - 9.625 percent Market Rate Interest (May, 1984) based on 40-year financing, useful life of the project or state requirements. 5% interest rates are available to communities below poverty level that need correction of a serious public health problem.

☒ GRANT ☒ LOAN

USE OF FUNDS

Installation, repair, improvement or expansion of rural waste disposal facilities including collection and treatment of sanitary wastes.

LIMITING FACTORS

Population
Median family income

EXAMPLES

Loan for sewer work:

City of Barbourville
Knox County, Kentucky
Charlie Buchanan, Mayor
(606)546-4171

CONTACTS

Program #10.418 Water and Waste Disposal Systems for Rural Communities, 1983 Catalogue of Federal Domestic Assistance, OMB, Washington, DC

Mr. Larry Bowman and Ms. Donna Roderick
Loan Specialists
Water and Waste Disposal Division
U.S. Department of Agriculture
Farmers Home Administration
Washington, DC 20250
(202)382-9583

See Appendix IV-A for individual state contacts.

MOUNTAIN COMMUNITIES WASTEWATER MANAGEMENT ASSESSMENT

ALTERNATIVES DEVELOPMENT REPORT

48<

FACT SHEET
FINANCIAL ALTERNATIVES

Figure 5-4

Appalachian Regional Commission Grants

FUNDING PROGRAM AND AGENCY

Appalachian Supplements to Federal Grant-In-Aid (Community Development)
Appalachian Regional Commission

PROGRAM OBJECTIVES

Assist in creation of jobs and other private sector involvement.

ELIGIBILITY REQUIREMENTS

State and, through the states, their subdivisions and private nonprofit agencies. Supplemental grants are limited to that amount needed to increase the Federal share to 80% of total eligible project costs.

ADMINISTRATIVE REQUIREMENTS

Applicants must first have a federal grant or loan.

Funding for FY-84	
Alabama	$ 3,650,000
Georgia	2,567,000
Kentucky	2,864,000
North Carolina	2,163,000
South Carolina	2,578,000
Tennessee	3,047,000
Total	$16,869,000

☒ GRANT ☐ LOAN

USE OF FUNDS

Provide supplemental funds to any Federal grant-in-aid program.

LIMITING FACTORS

Limited to economic development related projects.

EXAMPLES

Stanford Sewage System Improvements (1982)
Stanford, Kentucky 40484
James Harris, Mayor
(502) 365-7322

CONTACTS

Program #23.002 - Appalachian Supplements to Federal Grant-In-Aid (Community Development) Supplemental Grants, 1983 Catalogue of Federal Domestic Assistance, OMB, Washington, DC

Ms. Judy Powell
Appalachian Regional Commission
Washington, DC
(202) 673-7893

MOUNTAIN COMMUNITIES WASTEWATER MANAGEMENT ASSESSMENT

ALTERNATIVES DEVELOPMENT REPORT

50<

FACT SHEET
FINANCIAL ALTERNATIVES

Figure 5-5

Federal Economic Development Grants

FUNDING PROGRAM AND AGENCY

Economic Development Grants for Public Works and Development Facilities
Economic Development Administration
U.S. Department of Commerce

PROGRAM OBJECTIVES

To assist in the construction of public facilities needed to initiate and encourage long-term economic growth.

ELIGIBILITY REQUIREMENTS

States, cities, counties and other political subdivisions and private and public nonprofit organizations. Median family income and unemployment are considerations of eligibility. Project must conform with an EPA-approved Overall Economic Development Program and be located in an EDA designated area.

ADMINISTRATIVE REQUIREMENTS

Qualified projects must:

1. Improve opportunities for expansion or establishment of industrial or commercial plants or facilities.
2. Create or add long-term employment opportunities.
3. Benefit long-term unemployed and members of low income families.

☒ GRANT ☐ LOAN

USE OF FUNDS

Grants for water and sewer systems which benefit economic development. Grants vary from 50% to 100% depending upon economic conditions and applicant.

LIMITING FACTORS

Only used for economic development. Required income and unemployment conditions.

EXAMPLES

City of Conover
Catawba County, NC

City of Lynchburg
Moore County, SC

Mr. William J. Day, Regional Director
Economic Development Administration
1365 Peachtree Street, NE
Suite 750
Atlanta, GA 30309
(404)881-7401

CONTACTS

Program #11.300 - Economic Development Grants for Public Works and Development Facilities, 1983 Catalogue of Federal Domestic Assistance, OMB, Washington, DC

Main Office:

Mr. Charles W. Coss
Director of the Office of Public Works
Economic Development Administration
14th Street, NW
Washington, DC
(202)377-5265

MOUNTAIN COMMUNITIES WASTEWATER MANAGEMENT ASSESSMENT

ALTERNATIVES DEVELOPMENT REPORT

FACT SHEET
FINANCIAL ALTERNATIVES

Figure 5-6

Georgia Emergency Grants

FUNDING PROGRAM AND AGENCY

State of Georgia Emergency Grant Program for Construction of Water and Sewer Projects
Georgia Department of Natural Resources
Division of Environmental Protection

PROGRAM OBJECTIVES

Cover cost for emergency rehabilitation and replacement of wastewater facilities.

ELIGIBILITY REQUIREMENTS

The project must be a justified emergency need for rehabilitation or replacement.

Only government-owned (county, city or authority) facilities are eligible.

Sewage and sludge facilities can be eligible.

ADMINISTRATIVE REQUIREMENTS

No application deadline exists.

Up to 50 percent of engineering and construction costs are eligible for grant assistance.

$1 million allocated for FY-85.

☒ GRANT ☐ LOAN

USE OF FUNDS

For design and construction of emergency rehabilitation or replacement wastewater facilities.

LIMITING FACTORS

Must produce matching funds by non-State agency other than EPA.

Priority ranking based on point system.

EXAMPLES

City of Clayton
Rabun County
Paul Buchanan, Mayor
(404)782-4512

Grant for correction of sewer line problem due to flooding (1983)

CONTACTS

Mr. C. A. (Andy) Yarn
Environmental Protection Division
Georgia Department of Natural Resources
Atlanta, GA
(404) 656-7416

MOUNTAIN COMMUNITIES
WASTEWATER MANAGEMENT
ASSESSMENT

ALTERNATIVES
DEVELOPMENT REPORT

54<

FACT SHEET
FINANCIAL
ALTERNATIVES

Figure 5-7

Georgia Economic and Environmental Grants

FUNDING PROGRAM AND AGENCY

State of Georgia Economic and Environmental Grant Program for new or expanding industries
Georgia Department of Natural Resources
Division of Environmental Protection

PROGRAM OBJECTIVES

To enhance economic growth by providing needed water supply and pollution control facilities.

ELIGIBILITY REQUIREMENTS

Local governments with new or expanding industries can be eligible. Financial need must be demonstrated. Operators must meet minimum State qualifications. A capital cost-recovery system with a 20-year payback is required with funds to be retained by applicant for operation, maintenance and repair. An equitable user charge or rate structure is required.

ADMINISTRATIVE REQUIREMENTS

No application deadline exists.

Approved application forms must be submitted.

Decisions regarding grant awards are made as applications are received and reviewed.

$5 million allocated for FY-85 (beginning July 1, 1984).

Quarterly itemized reports are required.

☒ GRANT ☐ LOAN

USE OF FUNDS

These funds are utilized primarily to promote industrial growth, although funds for tourist areas have been considered eligible. Treatment plants, wastewater collection and interceptors, land, professional services, administrative costs and construction testing are eligible.

LIMITING FACTORS

Applicant must provide 50% of non-State funds (not including Federal EPA funds). Applications are rated according to a specified priority points system.

EXAMPLES

St. Mary's, GA
Camden County
Office of the Mayor
(919)882-5516

Calhoun, GA
Gordon County
Office of the Mayor
(404)629-0151

CONTACTS

Mr. C. A. (Andy) Yarn
Environmental Protection Division
Georgia Department of Natural Resources
Atlanta, GA
(404) 656-7416

MOUNTAIN COMMUNITIES WASTEWATER MANAGEMENT ASSESSMENT

ALTERNATIVES DEVELOPMENT REPORT

56<

FACT SHEET
FINANCIAL ALTERNATIVES

Figure 5-8

Georgia Environmental
Facilities Loan

FUNDING PROGRAM AND AGENCY

State of Georgia Environmental Facilities Program for Economic Development (administered by the Georgia Development Authority)

PROGRAM OBJECTIVES

To provide low interest loans to small communities for sewer and water projects in order to encourage economic development.

ELIGIBILITY REQUIREMENTS

Municipalities, counties, authorities and special districts are eligible. Preliminary technical approval of the project by the Georgia Environmental Protection Division is needed.

ADMINISTRATIVE REQUIREMENTS

7 1/2 to 7 3/4% loan interest rates are available.

Applications are to be considered on a "first come, first served" basis until loan funds allocated for a particular fiscal year are exhausted.

☐ GRANT ☒ LOAN

USE OF FUNDS

Both water and sewer projects will be eligible for this type of loan.

LIMITING FACTORS

$30 million will be available to local governments for water and sewer projects during Fiscal Year 1985 (beg. July 1, 1984).

EXAMPLES

Fiscal Year 1985 will be the first year this program will be in effect.

CONTACTS

Mr. Henry M. Huckaby (Executive Director)
or Mr. W. Ross King
Georgia Development Authority
Atlanta, GA
(404) 894-6044

MOUNTAIN COMMUNITIES WASTEWATER MANAGEMENT ASSESSMENT

ALTERNATIVES DEVELOPMENT REPORT

58<

FACT SHEET
FINANCIAL ALTERNATIVES

Figure 5-9

Kentucky Wastewater Loans

FUNDING PROGRAM AND AGENCY

State of Kentucky loan program for wastewater facilities
Kentucky Pollution Abatement Authority (part of the Finance Cabinet)

PROGRAM OBJECTIVES

To provide affordable loans for small municipalities with wastewater projects that do not themselves warrant separate issuance of bonds.

ELIGIBILITY REQUIREMENTS

The local municipality must be willing to enact a sewer fee structure to cover the debt that the loan is to handle.

Technical merit of the proposed facilities should be based on EPA fundability requirements.

ADMINISTRATIVE REQUIREMENTS

Application forms that need to be completed are available.

Federal or state engineers not employed by the Pollution Abatement Authority must handle field inspection and monitoring needs.

☐ GRANT ☒ LOAN

USE OF FUNDS

Funds from sewer fees are held in a reserve by the state on behalf of the municipality until the loan is completely repaid. The municipality need not hold funds in a reserve for operation-maintenance activities.

LIMITING FACTORS

If applications from small communities for this type of loan do not accumulate to warrant issuance of a bond, only some interim financing is available.

EXAMPLES

Alexandria, KY - Campbell County
Roger Steffen, Mayor
400 W. Main Street 41001
(502)635-4125 (City Hall)

Cold Springs , KY
Walter Koch, City Treasurer
29 E. Alexandria Pike 41076
(502)441-9604 (City Hall)

CONTACTS

Mr. Don Morse, Kentucky Pollution Abatement Authority (in Frankfort)
(502) 564-2924

MOUNTAIN COMMUNITIES
WASTEWATER MANAGEMENT
ASSESSMENT

ALTERNATIVES DEVELOPMENT REPORT

FACT SHEET
FINANCIAL ALTERNATIVES

Figure 5-10

North Carolina Clean Water Bonds

FUNDING PROGRAM AND AGENCY

State of North Carolina
Clean Water Board
Division of Environmental Management
Department of Natural Resources

PROGRAM OBJECTIVES

Assist local communities with the local share of wastewater projects.

ELIGIBILITY REQUIREMENTS

Any municipality in North Carolina which has received a federal grant or loan for a wastewater project.

ADMINISTRATIVE REQUIREMENTS

Program provides 25 percent of non-federal share of project costs or 1/2 of non-federal share, whichever is less.

☒ GRANT ☐ LOAN

USE OF FUNDS

For wastewater construction projects only.

LIMITING FACTORS

Limited to less than 8 percent of assessed value.
Program may expire at the end of this fiscal year.

EXAMPLES

Burnsville, North Carolina
Ronald Dayton, Mayor
(704)682-2420

Also:

Mars Hill, Buncombe County and
Spruce Pines, NC

CONTACTS

Mr. Herb Davis
Supervisor, State Grants Unit
NC Department of Natural Resources
Division of Environmental Management
Raleigh, NC
(919)733-6900

MOUNTAIN COMMUNITIES
WASTEWATER MANAGEMENT
ASSESSMENT

ALTERNATIVES
DEVELOPMENT REPORT

FACT SHEET
FINANCIAL
ALTERNATIVES

Figure 5-11

North Carolina One-Half
Cent Sales Tax

FUNDING PROGRAM AND AGENCY

State of North Carolina One-Half Cent Sales Tax
Administered by individual counties
40% of all proceeds are allocated to wastewater projects

PROGRAM OBJECTIVES

To assist local communities with wastewater projects.

ELIGIBILITY REQUIREMENTS

Any municipality in NC located in a county which has implemented the one-half cent sales tax. The tax program was started in 1983. Funds are dispersed within the municipality.

ADMINISTRATIVE REQUIREMENTS

The tax is administered at the County level.

☒ GRANT ☐ LOAN

USE OF FUNDS

For wastewater construction or operation and maintenance of wastewater facilities.

LIMITING FACTORS

Only available in those counties where the local option for a Federal grant or loan has been exercised.

EXAMPLES

Buncombe County

CONTACTS

Stephanie Richardson and Alan Wayhab
Division of Environmental Management
NC Department of Natural Resources
Raleigh, NC
(919) 733-6900

MOUNTAIN COMMUNITIES WASTEWATER MANAGEMENT ASSESSMENT

ALTERNATIVES DEVELOPMENT REPORT

FACT SHEET
FINANCIAL ALTERNATIVES

Figure 5-12

South Carolina Facilities
Development·Grants

FUNDING PROGRAM AND AGENCY

State of South Carolina Rural Community Facilities Development Grants Administered by the S.C. Division of Rural Improvement.

PROGRAM OBJECTIVES

To assist small towns and rural communities (population of 5,000 or less) with assessing and providing safe drinking water and wastewater services.

ELIGIBILITY REQUIREMENTS

Small towns and cities, local water companies and nonprofit organizations in areas with a population of less than 5,000 people can apply.

ADMINISTRATIVE REQUIREMENTS

A letter of intent must be submitted requesting an application and stating proposed amount and use of funds.

Final decisions are made within 30 days of receiving an application.

☒ GRANT ☐ LOAN

USE OF FUNDS

Grants ranging from $500 to $10,000 can be utilized for construction, feasibility/engineering studies or to assist in paying fees for connecting to a sewer system. Funds can be used to leverage financing from other sources.

LIMITING FACTORS

Emphasis is placed on projects that benefit low-income rural residents (as defined by poverty income guidelines), demonstrate cooperative funding arrangements and serve to reduce a known health hazard.

EXAMPLES

Town of Heath Springs
Lancaster County, South Carolina
Grant for performance of feasibility study for sewer system improvements

Warren Mackey, Mayor
P.O. Box 68
Heath Springs, SC

CONTACTS

Ms. Karen Ross Grant, Assistant Project Administrator
Div. of Rural Improvement

Office of the Governor
1205 Pendleton Street, Suite 303
Columbia, SC 29201
(803) 758-7804

MOUNTAIN COMMUNITIES
WASTEWATER MANAGEMENT
ASSESSMENT

ALTERNATIVES
DEVELOPMENT REPORT

>99

FACT SHEET
FINANCIAL
ALTERNATIVES

Figure 5-13

South Carolina Rural
Water-Sewer Grants

FUNDING PROGRAM AND AGENCY

State of South Carolina Rural Water and Sewer Program Grants
Administered by the South Carolina Department of Health and Environmental Control (DHEC), Bureau of Water Supply and Special Programs

PROGRAM OBJECTIVES

To provide some supplemental funds to small communities for water and sewer systems.

ELIGIBILITY REQUIREMENTS

Any authority, district, system or nonprofit organization recognized in the State or any general purpose local government or any municipal system in a city, town or village of less than 1,500 residents.

ADMINISTRATIVE REQUIREMENTS

An application is required as is verification from the primary funding source that an intention to provide funds exists.

☒ GRANT ☐ LOAN

USE OF FUNDS

Funds have been utilized primarily in the past for water supply facilities. Engineering, legal and construction costs are eligible.

LIMITING FACTORS

Only $130,000 are appropriated annually. The funds can be carried over from one year to another. Selection criteria have been established by the administering agency.

EXAMPLES

Funds used primarily for water supply facilities, although monies are available for sewer facilities.

CONTACTS

Ms. Pamela Robinson with DHEC in Columbia
(803) 758-7921 or

Mr. George Nelson, DHEC
(803) 758-5544

MOUNTAIN COMMUNITIES WASTEWATER MANAGEMENT ASSESSMENT

ALTERNATIVES DEVELOPMENT REPORT

68<

FACT SHEET
FINANCIAL ALTERNATIVES

Figure 5-14

Tennessee Wastewater Loans

FUNDING PROGRAM AND AGENCY

Tennessee Department of Public Health
Loan Program for Wastewater Projects

PROGRAM OBJECTIVES

To provide low interest loans for wastewater projects eligible for Federal grants.

ELIGIBILITY REQUIREMENTS

Municipality must be eligible for an EPA Construction Grant.

Project must be approved by Tennessee Department of Health.

Application must be submitted by a county or community that is eligible for state-shared taxes.

ADMINISTRATIVE REQUIREMENTS

No application deadlines

Loan amount cannot exceed the amount of state-shared taxes for 30 years at 13 percent. Current loan interest rate is 6.2 percent.

☐ GRANT ☒ LOAN

USE OF FUNDS

Funds are available for either eligible costs under the Federal Construction Grants program or for the local share.

LIMITING FACTORS

None. Based strictly on state-shared tax capacity.

EXAMPLES

Oakridge, Tennessee
Anderson County
Deborah Rosen
(615)483-5671
City Administrator--David Morris

Also:

Morristown, Tennessee
Jefferson City, Tennessee
Johnson City, Tennessee

CONTACTS

Mr. John Morgan
(Local Bonds and Finance)
Tennessee Department of Public Health
Nashville, TN
(615) 741-4272

MOUNTAIN COMMUNITIES
WASTEWATER MANAGEMENT
ASSESSMENT

ALTERNATIVES
DEVELOPMENT REPORT

FACT SHEET
FINANCIAL
ALTERNATIVES

Figure 5-15

Community Development Block Grants

FUNDING PROGRAM AND AGENCY

Community Development Block Grant (CDBG) Program
State Community Development Agencies

PROGRAM OBJECTIVES

To assist small communities with grants for community development.

ELIGIBILITY REQUIREMENTS

Generally, communities with less than 50,000 residents or counties with less than 200,000 residents are eligible.

ADMINISTRATIVE REQUIREMENTS

Competitive application process.

Administration of the grants varies from state to state.

Grants usually are available for 50% of project cost; however, this may vary from state to state.

☒ GRANT ☐ LOAN

USE OF FUNDS

Sewer and Water Projects
Housing
Commercial Revitalization

LIMITING FACTORS

EXAMPLES

Heath Springs, South Carolina
Madison County, North Carolina Housing Authority

Avery County, North Carolina Housing Department

(See below for contacts)

CONTACTS

Warren Mackey, Mayor
P.O. Box 68
Heath Springs, SC

Mr. Sam Parker
Madison County Housing Authority
(704)649-2788

Mr. Charles VonCannon
Avery County Commissioner
County Court House
Newland, NC 28657
(704)733-2900

MOUNTAIN COMMUNITIES
WASTEWATER MANAGEMENT
ASSESSMENT

ALTERNATIVES
DEVELOPMENT REPORT

72<

FACT SHEET
FINANCIAL
ALTERNATIVES

Figure 5-16

General Obligation Bonds

FUNDING PROGRAM AND AGENCY

General Obligation (GO) Bonds
Local Community, Special District or Authority

PROGRAM OBJECTIVES

GO Bonds provide funds to the local community for undertaking wastewater projects.

ELIGIBILITY REQUIREMENTS

Ability to sell bonds and repayment by the municipality are required.

ADMINISTRATIVE REQUIREMENTS

Municipal bond for which the full faith, credit, and taxing power of the issuing municipality is pledged to repay. Repayment can be through general property taxes, revenues from service charges, or special assessments. GO Bonds generally command lower interest rates and overhead costs since they have the full faith, credit, and taxing power of the municipality as security.

☐ GRANT ☒ LOAN

USE OF FUNDS

These funds can be used at the municipality's discretion for any portion of a wastewater project. Most commonly, bond proceeds are used to pay the non-Federal grant share of a project.

LIMITING FACTORS

State borrowing limitations, if any which are placed upon a municipality. Interest rates and other local indebtedness can also be limiting.

EXAMPLES

CONTACTS

Government Finance Research Center
1750 K St., N.W.
Suite 650
Washington, D.C. 20006
(202)466-2473

MOUNTAIN COMMUNITIES
WASTEWATER MANAGEMENT
ASSESSMENT

ALTERNATIVES DEVELOPMENT REPORT

74<

FACT SHEET
FINANCIAL ALTERNATIVES

Figure 5-17

Revenue Bonds

FUNDING PROGRAM AND AGENCY

Revenue Bonds

Local Community, Special District or Authorities can be the agencies responsible.

PROGRAM OBJECTIVES

Revenue bonds provide funds to the local community for undertaking wastewater projects.

ELIGIBILITY REQUIREMENTS

Ability to sell bonds and repayment by the municipality are required.

ADMINISTRATIVE REQUIREMENTS

A revenue bond is a municipal security payable from charges acquired from services provided by the capital improvement that is financed. No further backing of revenue bonds is generally required. Revenues for these projects would come from sewer rentals charged to users of the system.

☐ GRANT ☒ LOAN

USE OF FUNDS

These funds can be used at the municipality's discretion for any portion of a wastewater project.

LIMITING FACTORS

State borrowing limitations, if any. However, revenue bonds generally have no debt limits since they are tied to revenues from a specific project. Interest rates can also be limiting, if high.

EXAMPLES

CONTACTS

Government Finance Research Center
1750 K St., N.W.
Suite 650
Washington, D.C. 20006
(202)466-2473

MOUNTAIN COMMUNITIES
WASTEWATER MANAGEMENT
ASSESSMENT

ALTERNATIVES
DEVELOPMENT REPORT

76<

FACT SHEET
FINANCIAL
ALTERNATIVES

Figure 5-18

Bond Anticipation Notes

FUNDING PROGRAM AND AGENCY

Bond Anticipation Notes

Local Municipality, Special Districts or Authorities can be the agencies responsib

PROGRAM OBJECTIVES

To provide funds to the local municipality for undertaking wastewater projects.

ELIGIBILITY REQUIREMENTS

Ability to sell bonds and repayment by the municipality are required.

ADMINISTRATIVE REQUIREMENTS

Bond anticipation notes are backed by the anticipated proceeds of a future bond issue. These notes permit the issuer to delay placing a long-term bond issue on the market at a time when interest rates are high. It also provides the issuer a greater period of time to determine total capital financing requirements.

☐ GRANT ☒ LOAN

USE OF FUNDS

Used to meet financial demands that arise during the early construction stages of a wastewater treatment system.

LIMITING FACTORS

Interest rates
Bond buyer apprehension

EXAMPLES

CONTACTS

Government Finance Research Center
1750 K St., N.W.
Suite 650
Washington, D.C. 20006
(202)466-2473

MOUNTAIN COMMUNITIES
WASTEWATER MANAGEMENT
ASSESSMENT

ALTERNATIVES
DEVELOPMENT REPORT

78<

FACT SHEET
FINANCIAL
ALTERNATIVES

Figure 5-19

Short-Term Loans

FUNDING PROGRAM AND AGENCY

Short-Term Loans
Local Municipality, Special Districts or Authorities

PROGRAM OBJECTIVES

To provide funds during construction start-up.

ELIGIBILITY REQUIREMENTS

ADMINISTRATIVE REQUIREMENTS

Loans are usually secured by negotiable promissory notes and are repaid from the proceeds of long-term bond issues. Loans of this type also permit a borrower to delay placing a long-term bond issue in the market in times of adverse interest rates.

☐ GRANT ☒ LOAN

USE OF FUNDS

Capital cost payments during the early stages of a project.

LIMITING FACTORS

Interest rates

EXAMPLES

CONTACTS

Government Finance Research Center
1750 K St., NW
Suite 650
Washington, D.C. 20006
(202) 466-2473

MOUNTAIN COMMUNITIES WASTEWATER MANAGEMENT ASSESSMENT

ALTERNATIVES DEVELOPMENT REPORT

FACT SHEET
FINANCIAL ALTERNATIVES

Figure 5-20

Special Assessment Bonds

FUNDING PROGRAM AND AGENCY

Special Assessment Bonds

Local Municipality, Special Districts or Authorities can be the agencies responsible.

PROGRAM OBJECTIVES

To provide funds to the local municipality for undertaking wastewater projects.

ELIGIBILITY REQUIREMENTS

Ability to sell bonds and repayment by the municipality are required.

ADMINISTRATIVE REQUIREMENTS

Special assessment bonds are generally used to pay for capital costs associated with wastewater collection systems. Bonds are usually payable only from special benefit assessments that are based upon the front footage of lots served by sewer systems. The term of a special assessment bond is usually 3-5 years.

☐ GRANT ☒ LOAN

USE OF FUNDS

Funds from special assessment bonds are generally used for collection systems only.

LIMITING FACTORS

Interest rates
Terms of bonds

EXAMPLES

CONTACTS

Government Finance Research Center
1750 K St., NW
Suite 650
Washington, DC 20006
(202) 466-2473

MOUNTAIN COMMUNITIES WASTEWATER MANAGEMENT ASSESSMENT

ALTERNATIVES DEVELOPMENT REPORT

FACT SHEET
FINANCIAL ALTERNATIVES

Figure 5-21

User Charges

FUNDING PROGRAM AND AGENCY

Type of User Charges

Special Assessment
Connection Charges
Tapping Fees
Sewer Rentals

Agencies responsible for user charges can be local municipalities, special districts, or special authorities.

PROGRAM OBJECTIVES

To provide funds for any loan or bond repayment. Also serve as a source of funds for operation and maintenance costs.

ELIGIBILITY REQUIREMENTS

ADMINISTRATIVE REQUIREMENTS

Special Assessments - Generally levied on properties that benefit from the wastewater system. Assessments are usually calculated on a front footage basis.

Connection Charges - Levied against customers when they connect to the wastewater system.

Tapping Fees - This is an alternative to special assessments. Under this arrangement, each property owner is charged the same flat rate regardless of the size of the property.

Sewer Rentals - Monthly charges for use of the wastewater system.

☐ GRANT ☐ LOAN

USE OF FUNDS

Loan and bond repayment. Operation and maintenance costs.

LIMITING FACTORS

EXAMPLES

CONTACTS

Government Finance Research Center
1750 K St., N.W.
Suite 650
Washington, D.C. 20006
(202) 466-2473

CHAPTER 5 BIBLIOGRAPHY

BIBLIOGRAPHY

CHAPTER 5

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Petersen, John E. and Wesley C. Hough. 1983. Creative Capital Financing for State and Local Governments. Government Finance Research Center. Municipal Finance Officers Association. Chicago, IL.

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U.S. Office of Management and Budget. 1983. Catalogue of Federal Domestic Assistance. Washington, D.C.

Personal Communications:

Bowman, Larry C. 1984. Loan Specialist. Water and Waste Disposal Division. Farmers Home Administration. U.S. Department of Agriculture. Washington, D.C.

Davis, Herb. 1984. Supervisor, State Grants Unit. North Carolina Department of Natural Resources. Division of Environmental Management.

Grant, Karen Ross. 1984. Assistant Project Administrator. Division of Rural Improvement. Office of the Governor. South Carolina.

Huckaby, Henry M. 1984. Executive Director. Georgia Development Authority.

Manookian, Janet. 1984. Local Bonds and Finance. Tennessee Department of Public Health.

McIlwain, David. 1984. Acting Chief, Public Works. Economic Development Administration. Washington, D.C.

Morse, Don. 1984. Kentucky Pollution Abatement Authority. Frankfort.

Powell, Judy. 1984. Appalachian Regional Commission. Washington, D.C.

Robinson, Pamela. 1984. South Carolina Department of Health and Environmental Control.

Roderick, Donna. 1984. Loan Specialist. Water and Waste Disposal Division. Farmers Home Administration. U.S. Department of Agriculture. Washington, D.C.

Schutz, F.R. 1984. F.R. Schutz Consulting Engineers. Asheville, N.C.

Yarn, C.A. 1984. Environmental Protection Division. Georgia Department of Natural Resources.

VOLUME IV APPENDICES

APPENDIX IV-A STATE 201 CONSTRUCTION GRANT AND FmHA CONTACTS

VOLUME IV-A

STATE CONTACTS

State 201 Construction Grant Contacts:

Mr. William Manasco
Chief, Municipal Waste Control Section
Department of Environmental Management
Water Division
State Capital
Montgomery, AL 36130
(205)271-7700

Mr. Robert W. Troxler
Program Manager
Municipal Compliance and Technical Support Program
Environmental Protection Division
State of Georgia
3420 Norman Berry Drive
7th Floor
Hopeville, GA 30354
(404)656-7400

Mr. Judson Cramer
Construction Grants Branch
Bureau of Environmental Protection
18 Reilly Road
Fort Boone Plaza
Frankfort, KY 40601
(502)564-3410 x520

Mr. T. Allen Wahab
Environmental Engineer
Construction Grants Program
P.O. Box 27687
Raleigh, NC 27611
(919)733-6900

Mr. Samuel J. Grant, Jr.
Domestic Wastewater Division
South Carolina Department of Health
and Environmental Control
2600 Bull Street
Aycock Building
Columbia, SC 29201
(803)758-5067

Mr. Robert G. Threadgill, Jr.
Environmental Engineer
Division of Construction Grants and Loans
150 9th Avenue North
Nashville, TN 37203
(615)741-0638

State Farmers Home Administration Loan/Grant Contacts:

Mr. Bill Somerall
Community Program Chief
474 South Court Street
Montgomery, AL 36104
(205)832-7067

Mr. Jim Thigpen
Community Program Chief
355 East Hancock Avenue
Athens, GA 30601
(404)546-2162

Mr. Bob Letton
Community Program Chief
333 Waller Avenue
Lexington, KY 40504
(606)233-2733

Mr. Carson Brinkley
Community Program Chief
310 New Bern Avenue
Raleigh, NC 27601
(919)755-4640

Mr. Elwood Gerald
Community Program Chief
8135 Assembly Street
Columbia, SC 29201
(803)765-5163

Mr. Jim McCroy
Community Program Chief
U.S. Courthouse Building
801 Broadway
Nashville, TN 37203
(615)251-7341

APPENDIX IV-B FINANCIAL PLANNING HANDBOOK FOR WASTEWATER MANAGEMENT, EPA

APPENDIX III-B FINANCIAL PLANNING HANDBOOK FOR WASTEWATER MANAGEMENT, EPA

U. S. Environmental Protection Agency
Region IV - Atlanta

NORTH CAROLINA BARRIER ISLANDS
ENVIRONMENTAL IMPACT STATEMENT

FINANCIAL PLANNING HANDBOOK FOR WASTEWATER MANAGEMENT

September, 1982

TABLE OF CONTENTS

INTRODUCTION 1
WORKSHEET #1: FINANCIAL PLANNING CHECKLIST 3
WORKSHEET #2: COSTS OF PROPOSED IMPROVEMENTS 5
WORKSHEET #3: COST ESTIMATES BY HOUSEHOLD 7
WORKSHEET #4: AGENCY ROLES AND COST RESPONSIBILITIES 9
WORKSHEET #5: AGENCY FINANCIAL CAPABILITIES 11
WORKSHEET #6: SUMMARY OF FINANCIAL AND INSTITUTIONAL INFORMATION 13

94<

INTRODUCTION

Provision of wastewater treatment is a major financial undertaking for a community and its residents. There are multiple objectives to be met: protection of the environment, maintenance of water quality standards, reliable treatment and sufficient capacity to meet present and future demands, to name a few. Naturally, the goal is to fulfill these objectives without placing a financial burden on the community and its wastewater customers or taxpayers. This can best be accomplished by anticipating and understanding the likely financial and management impacts as plans evolve, so that informed decisions can be made to optimize the wastewater treatment plan.

Whether regional and/or centralized treatment facilities, community facilities, on-site systems, or alternative technologies are being considered, meeting the community's wastewater treatment needs and maintaining water quality will incur some costs. It is important to evaluate at an early stage the costs associated with alternative plans, and other financial and management implications that may arise. If such information is considered as planning progresses and alternatives are narrowed down, the community is more likely to arrive at a solution which is financially and institutionally acceptable as well as technically and environmentally sound.

The worksheets contained in this handbook are aids to financial planning for wastewater treatment. They are designed to address certain issues, provide analytical techniques, disclose information, and function as aids to decision-making regarding financial and management commitments.

A series of six worksheets is included:

#1: Financial Planning Checklist
#2: Costs of Proposed Improvements
#3: Cost Estimates by Household
#4: Agency Roles and Cost Responsibilities
#5: Agency Financial Capabilities
#6: Summary of Financial and Institutional Information

The remainder of this handbook contains brief descriptions of each worksheet and its purpose and gives recommendations for its use. The worksheets themselves are self-explanatory, with instructions incorporated on them.

The six sheets are intended to be used consecutively since the information required for each follows the natural progression of the types of financial and institutional planning tasks which should be a part of the facility planning process. In addition, the worksheets are linked so that in some instances results or responses obtained on a previous sheet are required.

A set of six worksheets should be filled out for each wastewater management system alternative during the alternatives evaluation phase of the planning process. The worksheets are meant to be an integral part of the study, not a task undertaken once the preferred alternative has been selected.

96<

WORKSHEET #1: FINANCIAL PLANNING CHECKLIST

Frequently, the early stages of facility planning are dominated by feasibility studies and consideration of technical alternatives. The financial and institutional implications of what is being considered are often overlooked or given minimal attention beyond estimating gross project costs.

Serious attention should be given to thorough financial planning early in the facility planning process for two major reasons: first, a complete picture of the financial and institutional aspects of various technical alternatives helps to assure selection of a plan which not only meets wastewater treatment needs, but is also implementable from a political and financial standpoint. Second, if potential issues are addressed at an early stage, there will be a better chance for satisfactory resolution and greater acceptance of the ultimate financial plan, particularly in a regional situation where a number of agencies may be involved in system financing and management.

The **Financial Planning Checklist** (Worksheet #1) is an aid to identifying the tasks which should be incorporated into the financial planning process in order to accomplish these objectives. The questions on the worksheet are intended to help those involved in system planning to structure an approach to addressing issues concerned with management and financing. It is recommended that a work plan be developed in which systematic financial and management planning tasks are identified.

Worksheets #2, 3, 4, and 5 are referred to on Worksheet #1 to indicate that many of the questions raised can be answered by using these worksheets to perform certain analyses or address specific issues. Worksheet #6 summarizes the results. A description of the purpose and use of each of the subsequent worksheets follows.

FINANCIAL PLANNING CHECKLIST*

A. Issue Identification and Work Plan Development For Financial and Institutional Analysis

	Yes	No
1. Has a **financial management oversight committee** been established with representation of all locally involved agencies, including elected officials, town or county managers, finance officers, and/or utility managers?	☐	☐
2. Have local issues which might affect implementation of financing arrangements, joint management agreements, cost allocation agreements, etc. been identified and discussed among appropriate local agencies and have acceptable solutions been proposed?	☐	☐
3. Has supporting information (such as population estimates, growth rates, and service areas) been reviewed and accepted by the appropriate agencies for use in estimating costs and analyzing financial requirements?	☐	☐
4. Have issues of a financial and institutional nature that might result from the inclusion of special populations in the plan (such as seasonal, major industrial or commercial users) been identified and discussed?	☐	☐
5. Has a **work plan** been developed in which financial and institutional planning and analysis tasks are identified?	☐	☐
6. Has technical facility planning been coordinated with financial and institutional tasks included in the work plan referred to in Question #5?	☐	☐
7. Will all segments of the public and the elected officials be advised of the **costs** of various alternatives and the institutional implications of each prior to selection of a system alternative?	☐	☐

B. Financial and Institutional Analysis

8. Are **cost estimates** for the proposed alternative systems up-to-date, reflecting current cost information and current (1982) price levels?	☐	☐
9. Have **total capital** costs been identified for **all** the components to be included in the proposed system alternatives, including those not expected to be grant-eligible? (See Worksheet #2)	☐	☐
10. Have **total annual** costs been estimated separately for administration, operations, maintenance, and capital replacements for the various alternatives? (See Worksheet #2)	☐	☐
11. Has a judgment been made regarding which of the system cost elements are eligible for outside funding? (See Worksheet #2)	☐	☐

12. Have estimates for different facility alternat
community, or on-site systems) been made
the proposed alternatives, expected outside
resulting local capital requirements? (See W

13. Have estimates been made of **average annu**
households that will be served by the propos
cluding permanent residents as distinct from
(See Worksheet #3)

14. Is information presented so that non-residen
calculate their costs? (See Worksheet #3)

15. Have the effects of factors such as inflation,
availability of grant funding, or use of plant i
considered as far as their effect on local sys
per household? (See back of Worksheet #3)

16. Has a determination been made of which ag
necessary legal and political powers to finan
and regulate the system? (See Worksheet #4)

17. Will existing agencies assume all system res
new entity be created to manage and operate
Worksheet #4)

18. Have all agencies which will bear **financial**
system been identified? (See Worksheet #4)

19. If more than one agency is to bear capital fin
tions and maintenance costs, has a formula
been proposed, discussed and agreed upon?

20. Will an **intergovernmental agreement** be esta
and responsibilities for all involved agencies
agreed upon? (See Worksheet #4)

21. Have the **financial consequences** of seconda
improvements such as locations and density
growth rates, and types of development been
Worksheet #4)

22. Have **ordinances** been established to regulat
of the proposed system in terms of effluent d
quirements for hook-ins, design standards, a
(See Worksheet #4)

23. Has the current **financial condition** of all age
financially involved in the system been asses
tial to assume new financial commitments?

24. Have various methods of financing the local
in regard to statutory limitations, effect on o
projects, or the financial status of the agency

25. Has a system of **fees and charges** been devi
nual operations, maintenance, and administ
Worksheet #5)

***Refer to Instructions at the right before completing the worksheet.**

LIST*

	Yes	No
ates for different facility alternatives (such as regional, or on-site systems) been made regarding total cost of d alternatives, expected outside funding support, and cal capital requirements? (See Worksheet #2)	☐	☐
ates been made of **average annual costs** for typical that will be served by the proposed alternatives, in- manent residents as distinct from seasonal residents? eet #3)	☐	☐
n presented so that non-residential users can readily ir costs? (See Worksheet #3)	☐	☐
cts of factors such as inflation, growth in households, f grant funding, or use of plant investment fees been s far as their effect on local system costs and costs d? (See back of Worksheet #3)	☐	☐
ination been made of which agencies have the gal and political powers to finance, operate, manage, the system? (See Worksheet #4)	☐	☐
agencies assume all system responsibilities, or will a created to manage and operate the system? (See 4)	☐	☐
ncies which will bear **financial responsibility** in the identified? (See Worksheet #4)	☐	☐
one agency is to bear capital financing and/or opera- intenance costs, has a formula for **cost allocation** d, discussed and agreed upon? (See Worksheet #4)	☐	☐
overnmental agreement be established by which roles bilities for all involved agencies are assigned and (See Worksheet #4)	☐	☐
ncial consequences of secondary effects of proposed such as locations and density of new development, and types of development been identified? (See)	☐	☐
es been established to regulate and ensure support d system in terms of effluent discharges, re- hook-ins, design standards, and extension policies? t #4)	☐	☐
t financial condition of all agencies which will be olved in the system been assessed in terms of poten- new financial commitments? (See Worksheet #5)	☐	☐
methods of financing the local costs been considered atutory limitations, effect on other agency financing financial status of the agency? (See Worksheet #5)	☐	☐
of fees and charges been devised for support of an- , maintenance, and administrative costs? (See	☐	☐

WORKSHEET #1

Agency ____________________

Date ____________________

Instructions

1. Worksheet #1 should be completed as a joint effort by town or county managers, finance officers, and/or elected officials of the agencies involved in the wastewater facility planning process. Its purpose is to **identify tasks** for financial and institutional analysis which should be completed in the early phases of facility planning, prior to adoption of a facility plan or final system alternative.
2. The responses to the questions on this worksheet will help identify needs for specific tasks, which may form the basis for developing a **work plan** to resolve issues and answer financial and institutional questions necessary to assure successful plan implementation.
3. Section A contains questions which relate generally to the facility planning process and how it is being managed; in particular, how financial and institutional tasks will be approached. Section B contains questions regarding specific analytical needs to resolve financial and institutional issues and establish an acceptable structure for effective system management and successful implementation. Note that in Section B each question is followed by a reference to another worksheet in this series which, when completed, will provide specific answers to the questions.

Prepared for EPA Region IV
for N.C. Barrier Islands EIS by BMML Briscoe, Maphis, Murray & Lamont, Inc.
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WORKSHEET #2: COSTS OF PROPOSED IMPROVEMENTS

Different facility engineering firms may approach the identification of system costs in various ways within a plan. The costs may be broken down to varying levels of detail; certain categories of costs may not be addressed; some plans contain estimates only for those system elements which are expected to be financed, at least in part, by state or federal funding. Worksheet #2 provides a consistent method of summarizing cost estimates for each of the various system alternatives.

The **Costs of Proposed Improvements** worksheet contains lines for entering costs associated with all the components and/or functions anticipated for a particular system alternative. It is applicable for all types of treatment systems, including central and/or regional, community facilities, and individual on-site systems. A summary of all estimates, including capital and operations and maintenance costs, can be entered on a single sheet; in addition, the expected non-local funding amounts are identified so that a clear picture of local financing responsibilities is obtained.

This worksheet should be used after preliminary estimates for system alternatives have been furnished by the engineering consultant. The engineer and a community finance officer should cooperatively use this sheet to summarize all costs associated with each viable alternative. Although preliminary estimates should be made as accurately as possible, the costs entered on Worksheet #2 should be updated as better information becomes available (including availability of grant funds), to serve as a basis for further analysis of system plans.

100<

COSTS OF PROPOSED IMPROVEMENTS*

First Year of F
Description of

Wastewater System Components/Functions	**5-year Estimated Capital Costs**				**Esti**
	Total Capital Cost	**– EPA Grant Eligible Amount**	**– Fed./State/ Other Funding**	**= Local Capital Cost**	**Personnel (Incl. Contract**
Centralized Facilities					
1. Treatment Facility(ies) ______					
2. ______					
3. Interceptor Sewers ______					
4. ______					
5. ______					
6. Pump Stations & Force Mains ______					
7. Ocean Outfall ______					
8. Collection Lines ______					
9. Sludge Handling & Disposal ______					
10. Land (Incl. Rights-of-Way) ______					
11. Management & Administration ______					
Community Facilities					
12. Facilities & Equipment ______					
13. ______					
14. ______					
15. Land (Incl. Rights-of-Way) ______					
16. Management & Administration ______					
Site Facilities					
17. Facilities & Equipment ______					
18. ______					
19. ______					
20. Land (Incl. Rights-of-Way) ______					
21. Management & Administration ______					
Other Costs					
22. Step 2-3 Planning & Engineering ______					
Miscellaneous Identifiable Costs					
23. ______					
24. **Total Cost of Proposed Improvements**	$	– $	– $	= **Total Local Capital Cost**	$
25. **Total Local Capital Costs (A.) and Total Annual O&M Costs (B.)**			**A.**	$	

Names of individuals/firm who prepared cost information: ______

Sources of information and methods used to calculate cost estimates (describe):

Comments/Qu

***The basis for the cost calculations contained on this worksheet, including key assumptions, is explained in the instructions provided at the right.**

First Year of **Full** Operation: 19____
Description of Proposed Improvements:

WORKSHEET #2

Agency ______________________
Date ______________________

Estimated Annual Operations & Maintenance (O&M) Costs (For 1st Year of Full Operation)

s Local ital Cost	Personnel (Incl. Contracts)	+	Materials (Incl. Power)	+	Reserve for Replacements	+	Other	=	Annual O&M Cost
tal Local ital Cost	$	+	$	+	$	+	$	=	Total Annual O&M Cost B. $

Instructions

1. Worksheet #2 should be completed jointly by the community's facility engineer and a finance officer.
2. All cost estimates should be expressed at **1982 constant price levels;** if another year is used, it should be explicitly identified and used consistently for all the worksheets.
3. Costs entered on Worksheet #2 should relate **only** to the proposed improvements; do not include costs attributable to any existing facilities.
4. Cost estimates should be made for **all** components, functions, or activities related to the total proposed improvements, regardless of the expected source of funding.
5. Capital costs should include all projected capital needs through the **fifth year** of full system operation. The anticipated EPA grant-eligible amount, as well as funding from other sources (including other federal, state, industry, or other third party) should be deducted from the total to give an estimate of local capital to be financed by local agencies.
6. O&M costs should represent requirements projected for the **first full year** of operation.

Comments/Qualifications:

rovided at the right.

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WORKSHEET #3: COST ESTIMATES BY HOUSEHOLD

Since the bulk of the system costs will ultimately be paid by community residents, taxpayers and/or system users, it is important to develop an estimate of annual costs attributable to an average or typical household to be served by the proposed system. It must be emphasized that these household cost estimates are not necessarily the same as the rates that will be charged for wastewater treatment. Rather, the figures derived on this worksheet are an estimate of what it will cost for an average household to receive treatment within the proposed system. Rates will be established at a later date, and constitute a decision to be made by the individual community.

Cost Estimates by Household (Worksheet #3) provides a step-by-step methodology to express total local system costs, including any existing cost components which are to be incorporated into the proposed system, in terms of household costs. This worksheet is designed to provide estimates for two classes of "typical" households: the average permanent residential and the average seasonal (or part-time) residential household. If there is an insignificant demand for part-time service, this part of the worksheet can be disregarded and estimates can be obtained only for permanent households. In addition, an estimate of costs per commercial or other specified user may be obtained by following the steps given in Instruction #6 on the worksheet.

Worksheet #3 provides for computation of annual debt repayment costs derived from the local capital cost total estimated on Worksheet #2 and combines costs associated with the proposed improvements with those which are to be carried over from existing facilities. A series of computational steps are then followed to allocate annual system costs to permanent and seasonal households. The methodoloy provided is a simplified method for calculating cost burden; the approach may be tailored to meet the needs of a specific situation.

In addition to computing an average annual cost per permanent and seasonal household in uninflated (1982) dollars, the back of Worksheet #3 gives instructions for conducting sensitivity (risk) analyses. The purpose for this is to test the effects of variable factors, such as inflation, growth in households, local funding requirements, and use of plant investment fees, on the individual household costs.

COST ESTIMATES BY HOUSEHOLD*

Step 1: Summary of Total System Costs For Year 1 and Year 5

(See Instructions #1, 2, 3)

A. Calculation of Annual Debt Repayment for Proposed Improvements:

1. Total local capital cost: $ ____________ (Worksheet #2, Line 25a; see Instruction #3)
2. Less: available local funds: (____________) (See Instruction #4)
3. Remainder: amount to be financed: ____________ (Line 1 − Line 2)
4. Add: legal & underwriting fees: ____________ (See Instruction #4 or use 1.5% of Line 3)
5. Add: reserve amount (if required): ____________ (See Instruction #4 or use 10% of Line 3)
6. TOTAL CAPITAL DEBT: ____________ (Line 3 + Line 4 + Line 5)
7. Estimated annual debt repayment: ____________ (See Repayment Schedule on reverse side)
8. Will hook up charges, called Plant Investment Fees (PIF's), be charged new customers to offset part or all of the projected annual debt repayment costs? Yes ☐ No ☐
9. If yes, what is the planned PIF per new connection? $ ____________

	Year 1	Year 5
10. Estimated number of new connections in preceding year:	a. ____________	b. ____________
11. Estimated total PIF revenue (Line 9 × Line 10 a, b):	a. $ ____________	b. $ ____________
12. **Net** annual debt repayment (Line 7 − Line 11 a, b):	a. $ ____________	b. $ ____________

B. Annual Total Cost of Existing System plus Proposed Improvements:

	Year 1	Year 5
Existing System: (See Instruction #3)		
13. Annual repayment on existing debt:	a. $ ____________	b. $ ____________
14. Annual O&M to be carried over:	a. $ ____________	b. $ ____________
Proposed Improvements:		
15. Net annual debt repayment (Line 12 a, b):	a. $ ____________	b. $ ____________
16. Annual O&M (Worksheet #2, Line 25 b for Year 1; estimate Year 5):	a. $ ____________	b. $ ____________
Total System:		
17. Total debt repayment (Line 13 a, b + 15 a, b):	**a. $** ____________	**b. $** ____________
18. Total annual O&M (Line 14 a, b + 16 a, b):	**a. $** ____________	**b. $** ____________

Step 2: Allocation of Annual Costs to Permanent, Seasonal Households

A. Allocation of Annual Debt Repayment Costs (See Instruction #5):

		Year 1	Year 5
19. Percent of plant capacity to serve permanent population:	______ % ÷ 100 =	a. 0. ____________	b. 0. ____________
20. Percent of plant capacity to serve seasonal population:	______ % ÷ 100 =	a. 0. ____________	b. 0. ____________
21. Debt repayment allocated for permanent capacity (Line 17a, b × 19a, b):		a. $ ____________	b. $ ____________
22. Debt repayment allocated for seasonal capacity (Line 18a, b × 20a, b):		a. $ ____________	b. $ ____________

B. Allocation of Annual O&M Costs (See Instruction #6)

23. Average Annual Permanent Residential Discharge:

a. Year 1: ____________ (# Perm. H.H.) × ____________ (# Persons/H.H.) × ____________ (Gal/Person/day) × 365 days/year = ____________ gallons per year

b. Year 5: ____________ (# Perm. H.H.) × ____________ (# Persons/H.H.) × ____________ (Gal/Person/day) × 365 days/year = ____________ gallons per year

24. Average Annual Seasonal Residential Discharge:

a. Year 1: ____________ (# Seas. H.H.) × ____________ (# Persons/H.H.) × ____________ (Gal/Person/day) × ____________ (# days/year) = ____________ gallons per year

b. Year 5: ____________ (# Seas. H.H.) × ____________ (# Persons/H.H.) × ____________ (Gal/Person/day) × ____________ (# days/year) = ____________ gallons per year

***The basis for the cost calculations contained on this worksheet, including key assumptions, is explained in the instructions provided at the right.**

First Year of F

# of Permanen

# of Seasonal

25. Residential Flo

(See Instructio

a. Year 1: (

b. Year 5: (

26. Ratio of Perma

a. Year 1:

(

b. Year 5:

(

27. Ratio of Seaso

a. Year 1:

(

b. Year 5:

(

28. Annual O&M all

a. Year 1: Line 18

b. Year 5: Line 18

29. Annual O&M allo

a. Year 1: Line 18

b. Year 5: Line 18

Step 3: Ca Pe

30. **Total Annual Co**

a. Year 1: (______ Line 2

b. Year 5: (______ Line 2

31. **Total Annual Co**

a. Year 1: (______ Line 2

b. Year 5: (______ Line 2

Next Step

WORKSHEET #3

Agency ____________________

Date ____________________

First Year of **Full** Operation: 19____ (Year 1) Fifth Year: 19____ (Year 5)

# of Permanent Residential Households: ________ ________

# of Seasonal Residential Households: ________ ________

25. Residential Flow Ratio = $\dfrac{\text{(Total System Flow } - \text{ Non-residential Flow)}}{\text{Total System Flow}}$

(See Instruction #6)

a. Year 1: $\dfrac{(\_\_\_\_\_\_) - (\_\_\_\_\_\_)}{(\_\_\_\_\_\_)}$ = 0.________

b. Year 5: $\dfrac{(\_\_\_\_\_\_) - (\_\_\_\_\_\_)}{(\_\_\_\_\_\_)}$ = 0.________

26. Ratio of Permanent Residential to Total System Flow:

a. Year 1: $\dfrac{(\underset{\text{Line 23a}}{\_\_\_\_\_\_})}{(\underset{\text{Line 23a}}{\_\_\_\_\_\_} + \underset{\text{Line 24a}}{\_\_\_\_\_\_})} \times \underset{\text{Line 25a}}{\_\_\_\_\_\_}$ = 0.________

b. Year 5: $\dfrac{(\underset{\text{Line 23b}}{\_\_\_\_\_\_})}{(\underset{\text{Line 23b}}{\_\_\_\_\_\_} + \underset{\text{Line 24b}}{\_\_\_\_\_\_})} \times \underset{\text{Line 25b}}{\_\_\_\_\_\_}$ = 0.________

27. Ratio of Seasonal Residential to Total System Flow:

a. Year 1: $\dfrac{(\underset{\text{Line 24a}}{\_\_\_\_\_\_})}{(\underset{\text{Line 23a}}{\_\_\_\_\_\_} + \underset{\text{Line 24a}}{\_\_\_\_\_\_})} \times \underset{\text{Line 25a}}{\_\_\_\_\_\_}$ = 0.________

b. Year 5: $\dfrac{(\underset{\text{Line 24b}}{\_\_\_\_\_\_})}{(\underset{\text{Line 23b}}{\_\_\_\_\_\_} + \underset{\text{Line 24b}}{\_\_\_\_\_\_})} \times \underset{\text{Line 25b}}{\_\_\_\_\_\_}$ = 0.________

28. Annual O&M allocated to Permanent Households:

a. Year 1: Line 18a × Line 26a = $________

b. Year 5: Line 18b × Line 26b = $________

29. Annual O&M allocated to Seasonal Households:

a. Year 1: Line 18a × Line 27a = $________

b. Year 5: Line 18b × Line 27b = $________

Step 3: Calculation of Year 1, Year 5 Costs per Permanent, Seasonal Household

30. **Total Annual Cost per Permanent Household:**

a. Year 1: $(\underset{\text{Line 21a}}{\_\_\_\_\_\_} + \underset{\text{Line 28a}}{\_\_\_\_\_\_}) \div \underset{\text{\# Perm. H.H.}}{\_\_\_\_\_\_}$ = $________

b. Year 5: $(\underset{\text{Line 21b}}{\_\_\_\_\_\_} + \underset{\text{Line 28b}}{\_\_\_\_\_\_}) \div \underset{\text{\# Perm. H.H.}}{\_\_\_\_\_\_}$ = $________

31. **Total Annual Cost per Seasonal Household:**

a. Year 1: $(\underset{\text{Line 22a}}{\_\_\_\_\_\_} + \underset{\text{Line 29a}}{\_\_\_\_\_\_}) \div \underset{\text{\# Seas. H.H.}}{\_\_\_\_\_\_}$ = $________

b. Year 5: $(\underset{\text{Line 22b}}{\_\_\_\_\_\_} + \underset{\text{Line 29b}}{\_\_\_\_\_\_}) \div \underset{\text{\# Seas. H.H.}}{\_\_\_\_\_\_}$ = $________

Next Step: Perform Risk Analysis

(Follow Procedure on Reverse Side)

Instructions

1. Worksheet #3 should be completed on a **system-wide** basis by the facility engineer and a finance officer. It is not necessary for each agency in a regional system to complete a separate Worksheet #3. **The techniques on this worksheet provide a simplified method for estimating household cost burden. If more accurate methods are available for specific calculations, enter the results in the appropriate blanks.** The results obtained are estimates of system **costs** per household and will **not** necessarily be the same as the **rates** which will be determined by community elected officials.
2. Worksheet #3 can be filled out more than once, varying key assumptions to show the sensitivity of cost estimates by household to risk factors such as inflation, local capital costs, growth in households, or PIF revenue. Refer to back of Worksheet #3 for detailed instructions on conducting risk analysis.
3. All costs should be expressed at **1982 price levels** (or other year if used consistently); for existing system costs in Line 14, use latest budget year data to project O&M costs which are to be carried over to Years 1 and 5, then adjust to 1982 price levels.
4. "Available Local Funds" (Line 2) is the amount of money (cash reserves, accumulated funds, or other) projected to be available for financing the proposed improvements. Estimates for Lines 4 and 5 should be based on the agency's experience with similar financing issues; rough estimates can be based on the percentages shown.
5. Debt repayment for facility capital is allocated according to the plant treatment capacity needed for the permanent and seasonal populations and other uses, since capacity must be sufficient to serve all users at peak usage. Lines 19 and 20 will not necessarily add up to 100%; a percentage of the remaining capacity can be calculated for specific commercial or other users and applied to the total debt repayment costs (Line 17) to derive their share of the capital debt costs.
6. Annual O&M costs are allocated on the basis of treatment of annual wastewater flows attributable to permanent and seasonal populations. In Lines 23 and 24, the annual household discharge (excluding infiltration/inflow) from permanent and seasonal residences is calculated to give a ratio of permanent to seasonal use. Line 25 a, b is a calculation of the decimal ratio of total residential flow (all flow not attributable to other uses; should include infiltration/inflow) to total system flow for Year 1 and 5. In Lines 26 and 27, the permanent and seasonal use ratios are applied to the total residential flow ratios to derive the ratios of permanent and seasonal flows (including infiltration/inflow) to total system flow. These ratios are multiplied in Lines 28 and 29 by total annual O&M costs to calculate the permanent and seasonal cost shares. O&M costs per commercial or other user can be derived separately for Year 1 and 5 as follows: **(1) Divide:** Total annual O&M costs (Line 18 a,b) ÷ Total annual system flow (for Year 1,5) = Annual O&M cost per gallon. **(2) Multiply:** Annual O&M cost per gallon × # gallons per year estimated for the specified user. This calculation assumes that each gallon of system flow has similar strength characteristics.

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Factors for Annual Debt Repayment
(Capital Recovery Factors)

Multiply the Total Capital Debt shown in Line 6 by the appropriate factor for the assumed rate of interest and term of maturity to derive a fixed amount for annual debt repayment. Enter on Line 7.

Term of Maturity	Interest Rate				
	8%	10%	12%	15%	20%
10 years	0.14903	0.16275	0.17698	0.19925	0.23852
15 years	0.11683	0.13147	0.14682	0.17102	0.21388
20 years	0.10185	0.11746	0.13388	0.15976	0.20536
25 years	0.09368	0.11017	0.12750	0.15470	0.20212

RISK ANALYSIS OF HOUSEHOLD COST ESTIMATES

Cost estimates on Worksheet #2 and the calculations made on Worksheet #3 are based initially on assumptions considered "most likely" at the time they are made but may vary as grant awards, design and construction proceed. It is important to test the sensitivity of Costs per Household to variables such as inflation, growth in households, local funding share, amount of plant investment fees, proportion of permanent/seasonal population, and any other factors which are likely to vary from what is being planned.

Sensitivity or Risk Analyses can be conducted by changing only a few of the procedures on Worksheet #3, each me varying one assumption to test the effect on the cost per household. For each Risk Analysis performed, a rate Worksheet #3 should be used, with the new assumption clearly indicated.

Step 1: Risk Factor: Inflation

1. Assume an annual rate of inflation which might be expected to affect the annual O&M costs: debt repayment will not be affected by inflation since it is a fixed cost determined at the time of financing.
2. Calculate the number of years' inflation affecting costs in Years 1 and 5: subtract 1982 (or the year initially used for expressing all costs) from Year 1 and 5.
3. In the Inflation Factor table, find the factors for the assumed rate of inflation and the appropriate number of years (two different factors for Year 1 and 5).
4. Multiply the factors by O&M costs given for the Existing System (Lines 14 a, b) and Proposed Improvements (Lines 16 a, b).

Example: **Assumed rate of inflation:** 10% **Year 1:** 1984 **Year 5:** 1988
O&M costs (1982 prices): $17,500

Factor for 2 years' inflation (Year 1): 1.210 × $17, 500 = $21,175

Factor for 6 years' inflation (Year 5): 1.772 × $17,500 = $31,010

5. Re-calculate Lines 28-31 on Worksheet #3 using adjusted O&M costs.
6. Perform a second Risk Analysis using a higher assumed rate of inflation to measure the increased risk.

Note: Inflation factors must not be used in overall alternative analysis, except as allowed by regulation (e.g. land, energy costs). These factors are to be used for estimating **local** costs as they may be affected in future years.

Inflation Factor Table

Annual Rate of Inflation:	7%	8%	9%	10%	11%	12%	13%	14%	15%	16%
1 year	1.07	1.08	1.09	1.10	1.11	1.12	1.13	1.14	1.15	1.16
2 years	1.145	1.166	1.188	1.210	1.232	1.254	1.277	1.300	1.323	1.346
3 years	1.225	1.260	1.295	1.331	1.368	1.405	1.443	1.482	1.521	1.561
4 years	1.311	1.360	1.412	1.464	1.518	1.574	1.630	1.689	1.749	1.811
5 years	1.403	1.469	1.539	1.611	1.685	1.762	1.842	1.925	2.011	2.100
6 years	1.501	1.587	1.677	1.772	1.870	1.974	2.082	2.195	2.313	2.436
7 years	1.606	1.714	1.828	1.949	2.076	2.211	2.353	2.502	2.660	2.826

Step 2: Risk Factor: Growth in Households

The first estimates of the number of permanent and seasonal households in Years 1 and 5, given at the top of Worksheet #3, are derived from the **anticipated growth rate** used in designing the facilities. If growth is slower than anticipated, there may be fewer households to share the annual costs and less PIF revenues to offset debt repayment costs. If the proportion of permanent to seasonal households varies, this may also affect costs per household.

1. Conduct a Risk Analysis by changing the number of households in Year 1 and 5 to reflect a slower rate of growth. Re-calculate Lines 23, 24, 30, and 31.
2. Vary the proportion of permanent and seasonal households expected. Re-calculate Lines 23, 24, 30 and 31.

Step 3: Risk Factor: Amount of Local Funding Share

Worksheet #2 provides estimates of Total Capital Costs, outside funding, and local share based on current expectations about funding. The actual amount to be funded by the local agency is likely to change as planning proceeds and grant awards are determined. The effects of less optimistic view of funding should be tested.

1. Conduct a Risk Analysis by assuming higher initial capital costs, or assume reduced or no outside funding on Worksheet #2. Enter new local capital cost on Line 1; re-calculate Lines 3-7, 12, 17, 21, 22, 30, and 31.
2. Complete Worksheet #3 with the higher assumed capital cost.

Step 4: Risk Factor: Plant Investment Fees

The amount of PIF funds available depends on the PIF charge set by the operating agency and on the amount of growth in new connections on which PIF's are charged. The amount of PIF revenue can be varied by assuming different PIF charges or total PIF funds available in Year 1 and 5 to check the effect on annual costs per household.

1. Vary the planned PIF charge in Line 9 and the total PIF revenue in Line 11 to calculate a different amount of net annual debt repayment to be shared by all system users.
2. Re-calculate Lines 12, 15, 17, 21, 22, 30 and 31.

WORKSHEET #4: AGENCY ROLES AND COST RESPONSIBILITIES

Several decisions about system management which will have financial implications must be made before adoption of a wastewater treatment plan. There may be several agencies which have institutional powers that affect the system, and it is important to establish who will be responsible for various system functions in the general areas of planning, operations, management, and regulation.

Worksheet #4, **Agency Roles and Cost Responsibilities,** gives an indication of the types of functions and activities for which various agencies may be assigned primary responsibility. Even in the case of a single agency such as a city or town providing treatment for its constituents, there may nevertheless be other agencies whose actions can assure support for the system (for example, a county's powers to make land-use decisions). If a regional system is planned, two or more agencies will probably be contributing financially as well as sharing other management responsibilities. If cost-sharing is involved, a suitable method of allocating the costs must be agreed upon; each agency's financial and management responsibilities should be identified in the manner suggested on Worksheet #4. A clear understanding of how these roles will be determined is critical to successful implementation through a cooperative agreement.

AGENCY ROLES & COST RESPONSIBILITIES*

A. Assignment of System Functions

On the top row of the chart, enter the names of all agencies or groups which will have primary responsibilities in the system; then indicate which functions each will perform:

Agency Names and Types (City, County, District, Industry, etc.)					
System Functions					
1. **System Planning:**					
2. **Ownership of:**					
a. Treatment Facilities					
• Centralized					
• Community					
• On-Site					
b. Collection Lines					
c. Disposal Facilities					
d. Other ____________					
3. **Financial Responsibilities:**					
a. Capital Financing					
b. Annual O&M Costs					
c. Grant Administration					
d. Accounting System					
4. **Management:**					
a. System Operation					
b. Policy Decisions					
5. **Regulation:**					
a. Ordinances					
b. Enforcement of Standards					

B. Allocation of Total System Costs (See Instruction #3)

6. Enter total local capital costs (Worksheet #2, Line 25a): $________________

7. Which agencies will contribute to capital financing costs:

____

8. Explain basis or give formula or example indicating how local capital costs will be allocated among above agencies:

*Refer to instructions at the right before completing the worksheet.

9. How much of the total local c

Agency	
a. ____________	$
b. ____________	$
c. ____________	$

10. Enter total annual O&M cost (W

11. Which agencies will contribut

____

12. Explain basis or give formula o

C. Legal Support fo

Indicate which of the following me
system service area:

13. Requirement that all **potential**
as well as new development) ho

14. Extension policies establishing
facilities to serve new developm

15. Minimum design standards to a

16. Requirement for public ownersh

17. Prohibition of illegal or excessiv

18. Prohibition of illegal connection

19. Other: ____________

D. Implementation

20. An intergovernmental agreement

____

____

Indicate the provisions which wi

21. Establishment and membership

22. Delineation of, and provision for

23. Methods and administration of c

24. Intended methods of financing a

25. Guarantee of treatment capacity

26. Assignment of responsibilities fo

27. Other: ____________

WORKSHEET #4

Agency ______________________

Date ______________________

How much of the total local capital costs will each agency be responsible for?

	Agency	Amount		Agency	Amount
a.	________	$ ________	d.	________	$ ________
b.	________	$ ________	e.	________	$ ________
c.	________	$ ________			

Enter total annual O&M cost (Worksheet #2, Line 25b): $ ______________________

Which agencies will contribute to annual O&M costs (Line 3b, above):

____

Explain basis or give formula or example for allocation of O&M costs among above agencies:

C. Legal Support for System Implementation

dicate which of the following measures will be established as ordinances or resolutions governing the ystem service area:

	Yes	No
Requirement that all **potential users** in the service area (including those now on septics as well as new development) hook into system:	☐	☐
Extension policies establishing responsibility for costs, design, etc. of extension of facilities to serve new developments:	☐	☐
Minimum design standards to assure compatible facilities:	☐	☐
Requirement for public ownership of collection lines:	☐	☐
Prohibition of illegal or excessive discharges to system:	☐	☐
Prohibition of illegal connections to system:	☐	☐
Other: ______________________	☐	☐

D. Implementation Agreements

An intergovernmental agreement will be established among the following agencies: ________

____

____

Indicate the provisions which will be included in the agreement:	Yes	No
Establishment and membership of system management oversight committee:	☐	☐
Delineation of, and provision for amending, service area boundaries:	☐	☐
Methods and administration of cost allocations for capital and O&M:	☐	☐
Intended methods of financing and provision for establishing rates:	☐	☐
Guarantee of treatment capacity for participating agencies:	☐	☐
Assignment of responsibilities for all system functions listed in Lines 1 through 5 above:	☐	☐
Other: ______________________	☐	☐

Instructions

1. Worksheet #4 should be completed as a joint effort by representatives of all involved local agencies (the membership of financial management oversight committee).
2. This worksheet is primarily intended for use in a situation where a regional system, serving two or more agencies, is being planned. Much of the information requested may nevertheless apply to systems involving only one agency.
3. Section B applies only to a regional situation where two or more agencies will share cost-bearing responsibilities. While there may be only one lead agency responsible for financing total local costs (Line 3a), the other participating agencies will be allocated cost-shares which are then reimbursed on some agreed-upon basis, to be described in Lines 8 and 12. Cost allocation among participating agencies should not be confused with the allocation of annual costs to various classes of users (presented on Worksheet #3). The latter is an estimation of average individual **user** costs on a system-wide basis while Worksheet #4, Section B asks how the total system costs will be divided up among **agencies**.
4. The information entered on this worksheet is for planning purposes and does not constitute a formal agreement among agencies. Mutual cooperation should be guaranteed by an intergovernmental agreement (Section D).

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WORKSHEET #5: AGENCY FINANCIAL CAPABILITIES

On Worksheet #2, total local system costs are identified; Worksheet #3 gives an estimate of the cost burden for individual households on a system-wide basis. On Worksheet #4, financial and institutional responsibilities for the individual participating agencies are determined. An assessment of whether each agency can afford its financial commitment to the proposed system, in light of its existing governmental financial activities, is the next step in financial planning. If a regional system is being planned, each agency must address this question by filling out Worksheet #5.

Agency Financial Capabilities (Worksheet #5) is a compilation of financial data which provides a basis for judgments concerning whether and how the agency can finance its share of system costs. Information concerning basic resources, governmental fund activities, existing debts, and tax rates is used to indicate the current financial status of the agency. In addition, the agency's intended methods of financing its share of capital and O & M costs are to be recorded on the worksheet.

The data provided do not answer the question of whether the agency has the necessary financial capability. Interpretation of the information is left to the agency's financial experts; however, some guidelines are provided on the back of Worksheet #5 for analysis of the information.

AGENCY FINANCIAL CAPABILITIES*

A. Basic Resources

	(Fiscal Year 1981)	(Fiscal Year 1976)	(Percent Change) (1976 to 1981)
1. Population Within Jurisdiction			%
2. Taxable Assessed Valuation	$	$	%
3. Assessed Valuation Per Capita (Line 2 ÷ Line 1)	$ per person	$ per person	%

D. Existing Debt and

18. **Existing Long-Term Debt:**
   a. General Obligation Bonds:
   b. Revenue Bonds:
   c. Bonds authorized but unissued:
   d. Other long-term debt:

B. Financial Position of General, Sewer and/or Water Funds
(See Instruction #4)

General Fund

	(F.Y. 1981)		(F.Y. 1976)		(% Change) (1976 to 1981)
4. Working Capital (Current Assets – Current Liabilities)					%
5. Beginning Fund Balance					%
	(Amount/Percent of Total)				
6. **Total Revenues:**	$	100%	$	100%	%
a. Property Tax		%		%	
b. Other Taxes		%		%	
c. Fees & Charges		%		%	
d. Other Local		%		%	
e. Non-Local		%		%	
f. Transfers In: Total		%		%	
From:					
7. **Total Expenditures:**	$	100%	$	100%	%
a. General/Administrative		%		%	
b. Operations/ Maintenance		%		%	
c. Capital Outlay		%		%	
d. Debt Service		%		%	
e. Other		%		%	
f. Transfers Out: Total		%		%	
To:					
8. Ending Fund Balance:	$		$		%

Sewer Fund (Or Water/Sewer Fund, or Water Fund)

	(F.Y. 1981)		(F.Y. 1976)	
9. Working Capital (Current Assets – Current Liabilities)	$		$	
10. Beginning Fund Balance	$		$	
	(Amount/Percent of Total)			
11. **Total Revenues:**	$	100%	$	100%
a. Charges for Services		%		%
b. Connection Fees		%		%
c. Property Tax		%		%
d. Other		%		%
e. Transfers In: Total		%		%
From:				
12. **Total Expenditures:**	$	100%	$	100%
a. General/Administrative		%		%
b. Operations/ Maintenance		%		%
c. Capital Outlay		%		%
d. Debt Service		%		%
e. Other		%		%
f. Transfers Out: Total		%		%
To:				
13. Ending Fund Balance	$		$	

C. Property Tax Rates & Collections

	(F.Y. 1981)	(F.Y. 1976)
14. **Total Rate** per $100 (All Funds)	¢	¢
a. General Purpose	¢	¢
b. Debt Retirement	¢	¢
c. Other	¢	¢

	(F.Y. 1981)	(F.Y. 1976)
15. Total Property Tax Collections	$	$
16. Total Collections Per Capita	$	$

17. Is the percent change shown in Line 16 less than, equal to, or greater than the rate of inflation in local costs of your agency over the period from 1976 to 1981?

***Refer to instructions at the right before completing the worksheet.**

LITIES*

WORKSHEET #5

Agency ____________________

Date ____________________

xisting Debt and Debt Capacity (See Instruction #5)

ng Long-Term Debt:	Purpose	Amount Outstanding	Annual Debt Payment	Source of Repayment
neral Obligation Bonds:	________	$________	$________	________
	________	$________	$________	________
	________	$________	$________	________
venue Bonds:	________	$________	$________	________
	________	$________	$________	________
nds authorized unissued:	________	$________	$________	________
er long-term debt:	________	$________	$________	________

, or Water Fund)

1981)	(F.Y. 1976)		(% Change) (1976 to 1981)
________	$________		______%
)			
________	$________		______%
mount/Percent of Total)			
100%	$________	100%	______%
%	________	%	
%	________	%	
%	________	%	
%	________	%	
%	________	%	
100%	$________	100%	______%
%	________	%	
%	________	%	
%	________	%	
%	________	%	
%	________	%	
%	________	%	
________	$________		______%

1981)	(F.Y. 1976)	(% Change) (1976 to 1981)
________	$________	______%
________	$________	______%

ancy

19. **Net** Outstanding Debt: $ ____________________
(N.C. Statutes 159-55)

20. Net Debt as % of Assessed Value: __________ %

21. Remaining Capacity for G.O. Debt:

$$\frac{(8\% - \underset{\text{Line 20}}{\underline{\qquad}})}{100} \times \underset{\text{Current Assessed Value}}{\underline{\qquad\qquad}} = \$\underline{\qquad}$$

E. Intended Methods of Financing Capital and O&M Costs (See Instruction #6)

22. Individual agency's share of local capital financing: $ ____________________
(See Worksheet #2, 4)

23. Intended methods for capital financing:

	Method (G.O., Revenue, Loan, etc.)	**Amount**	**Source of Repayment** (Taxes, PIF's, Assessments)	**% Each Source**
a.	________	$________	________	______%
b.	________	$________	________	______%
c.	________	$________	________	______%

24. Total Net Debt margin anticipated after financing: __________% of Assessed Valuation

25. Increase in tax rate (if any) due to proposed financing: __________¢ per $100

26. Individual agency's share of annual O&M costs (See Worksheet #2, 4): $ __________

27. Intended sources of annual operating revenue (give % of total amount required):

a. User charges : ______%
b. Property tax : ______%
c. Other ________ : ______%
Total: 100%

Instruction

1. Worksheet #5 should be completed separately for **each** agency which will have financial responsibility in the proposed system by a finance officer of that agency.
2. Sources of financial information are the financial audit reports prepared for Fiscal Years 1981 (July 1, 1980 to June 30, 1981) and 1976. If more recent data are available (for example, after the end of fiscal year 1982), use the most recent audited year and five years previous, indicating which years are represented.
3. Percent Change 1976 to 1981 is the total amount of change occurring in that period. If the percentage represents a decrease, indicate by enclosing the figure in parentheses.
4. Financial information is required for two types of funds. General Fund Information is to be filled out for all general-purpose governments (not applicable for special-purpose districts). For all agencies currently operating a wastewater and water system, information on the Sewer Fund is preferred. If both activities are operated as a combined Water/Sewer Fund, use these data. If the agency operates only a water system, enter these data. Indicate which fund is represented, if either.
5. Information about the current status of the agency's long-term debt and debt repayment requirements is available from the N.C. Local Government Commission. Net Outstanding Debt is defined in the N.C. General Statutes, Section 159-55, and is the basis for calculating an agency's debt subject to the 8% statutory limitation.
6. Intended methods of financing represent the best judgment of the agency's finance officer, based on current financial condition regarding potential sources of financing for its capital and operating revenue and the resultant effect on tax rates, debt margin, etc.
7. Interpretation of the information provided on this worksheet is the responsibility of local officials. Refer to back of this worksheet for some guidelines to the interpretation.

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INTERPRETATION OF AGENCY FINANCIAL CAPABILITIES

The financial data given on Worksheet #5 are the basis for assessing an agency's ability to assume the financial commitment necessary for wastewater system financing. The interpretation of the data is left to the agency's finance officers who may make recommendations about financing and the elected officials who must make the final decision regarding financial commitment to the system. Nevertheless, some guidelines to help interpret the meaning of the information on the other side are provided here.

A. Basic Resources

If assessed valuation is increasing more rapidly than population (a net gain in per capita valuation), the tax base is probably expanding to reflect some degree of inflation in addition to population growth. Growth in per capita valuation will relieve the burden on the taxpayer; on the other hand, decreasing valuation per capita implies the reverse.

B. Financial Position of General, Sewer, and/or Water Funds

Data on the General Fund are used to indicate whether an agency is currently straining to pay for basic services provided and in general summarizes its state of financial health. For both the General and the Sewer or Water Funds, Working Capital (Lines 4, 9) shows general liquidity or the agency's ability to cope with day-to-day financial obligations.

The Beginning and Ending Fund Balances indicate the extent to which the agency is accumulating or depleting surpluses, which may or may not represent funds available to help finance wastewater improvements. A comparison of Total Revenues with Total Expenditures shows whether current revenues are adequate to pay for current costs or if carried-over balances are relied on to make up the deficit. Percentages of various categories of revenues show which sources are relied upon most heavily for fund support.

The percentage of change over the 1976 to 1982 period indicates the relative growth in revenues as compared with expenditures and also allows comparison of both with inflation to show if revenues are responding sufficiently to offset rising costs. If revenues and costs are not keeping pace with inflation per capita (i.e. with population growth), future financial difficulties may arise.

C. Property Tax Rates and Collections

Property taxes are probably the mainstay of local government income. The question is, are property tax rates being pushed to the limit? Compare the general purpose rate to the limitation imposed by North Carolina law of $1.50 per $100 for Group II (general) functions. Although the rate for debt service is not subject to a limit, this rate and the total tax rate suggest the extent of the current burden on the taxpayers. Note that the rates given on this worksheet represent only the levies of the agency named. Other jurisdictions are taxing the same taxpayers, creating an overlapping tax burden which should also be considered.

Although total collections per capita may have increased over the five year period, it is important to compare this with the increase in inflation for the same period to see if the per capita tax dollar is keeping pace with inflation.

D. Existing Debt and Debt Capacity

The amounts and types of outstanding debt carried by the agency may indicate whether it has any margin to incur additional debts for capital financing. Net general outstanding debt is subject to a statutory limit of 8% of current assessed valuation in North Carolina. Calculation of remaining capacity shows at a glance whether the agency can use G.O. financing. In certain cases, exemption from the limitation may be granted for sewer system financing; otherwise other methods may have to be considered. From the point of view of the taxpayers and lenders as well, bonds repaid from sewer charges might be considered less burdensome than those repaid from property taxes.

E. Intended Methods of Financing

After completion of the rest of Worksheet #5, this section requests information regarding which methods of capital financing seem most likely or appropriate for each agency with financing responsibilities, and what effects they might have on statutory limitations. Sources of income for O&M are usually based on a user charge system, although some other sources may contribute revenues for system operations. This provides a preliminary indication of the types of rate structures that might be established and how these decisions might relate to existing levels of property taxes and other revenues relied on as income to the General Fund.

WORKSHEET #6: SUMMARY OF FINANCIAL AND INSTITUTIONAL INFORMATION

The final worksheet in the series serves the purpose of summarizing the information provided on the preceding worksheets. Information on the proposed system, its total estimated costs, household cost burden, agency responsibilities, and intended financing methods is presented in a concise format. The primary purpose for this worksheet is to summarize the results of the analytical and planning tasks performed in the financial planning process. Worksheet #6 should be completed, reproduced and distributed at a public hearing for consideration of the recommended system alternative(s). If more than one plan is being presented, several Worksheets #6 could be filled out, one for each plan, to allow comparison of the financial and institutional implications of each.

The **Financial Planning Handbook** and Worksheets #1-6 should be considered tools to promote better understanding of the implications of facility planning. They can serve the purpose of anticipating outcomes of various decisions which might be made during the planning process. They should not be considered an end product but can best be used as planning aids. As such, the whole package, or any part of it, can be used repeatedly at various stages of facility planning. Even as design and construction progress the package can be used to refine the financial and institutional information provided.

*U.S. GOVERNMENT PRINTING OFFICE: 1983-650-127 Region 4.

SUMMARY OF FINANCIAL AND INSTITUTIONAL INFORMATIO

A. What is Proposed in the Facility Plan?

1. What type of system is planned?
   - ☐ Centralized wastewater treatment
   - ☐ Community treatment facilities
   - ☐ On-site systems
   - ☐ Other: ____________________

2. The proposed facilities include:
   - ☐ New facilities
   - ☐ Expansion of existing facilities
   - ☐ Upgrading or replacement of existing facilities

3. Facilities to be constructed:
   - ☐ Treatment facility(ies)
   - ☐ On-site systems (individual)
   - ☐ Interceptor sewers
   - ☐ Pump station(s)
   - ☐ Collection lines
   - ☐ Other components: ____________________

4. The facilities will benefit:
   - ☐ Population now on sewers
   - ☐ Anticipated growth
   - ☐ Developed areas served by septics

5. Areas to be served (attach map):
   - ☐ Municipality
   - ☐ County
   - ☐ District
   - ☐ Industry
   - ☐ Other: ____________________

6. Estimated population:

	Permanent	**Seasonal**
in first full year of operation:	________	________
in fifth year of operation:	________	________

7. Give a timetable for construction and operation of the proposed facilities (attach schedule):

Begin construction ____________________
Completion of system ____________________
First year of service ____________________
First year of full operation ____________________

B. How Much Will the System Cost At Today's (1982) Prices?

(See Worksheet #2)

8. Estimated Capital Costs of Proposed Improvements:
(Worksheet #2, Line 25a)

(Total Capital Cost)	–	(Expected EPA Amount)	–	(Other Non-Local Amount)	–	(Local Funds Available)	=	Amount to be Locally Financed
$__________	–	$__________	–	$__________	–	$__________	=	$__________

9. Estimated annual operations, maintenance and replacement costs:
   - Existing facilities: $__________ per year (Worksheet #3, Line 14)
   - New facilities:

Year 1: $__________ per year
Year 5: $__________ per year
(Worksheet #3, Line 16)

10. Method of calculating costs:
    - ☐ Standard engineering cost curves
    - ☐ Comparison to comparable system
    - ☐ Adjustment for local conditions
    - ☐ Other (describe) ____________________

____

C. What Are the Average Annual Costs to Typical Permanent and Seasonal Households? (See Worksheet #3)

11. How many permanent households are expected to be served in Year 1? ________
in Year 5? ________

12. What is the average annual cost for a **permanent** household in Year 1? $________
in Year 5? $________
(Worksheet #3, Line 30)

13. How many seasonal or part-time households are expected to be served in Year 1? ________
in Year 5? ________

14. What is the average annual cost for a **seasonal** household in Year 1? $________
in Year 5? $________
(Worksheet #3, Line 31)

***Refer to instructions at the right for the basis of the information on this worksheet.**

D. What Rol Governm

15. What agencies will:
    - Own the wastewater
    ____
    - Operate the faciliti
    ____
    - Finance the constru
    ____

16. Will system costs be agencies? Yes
Names: ____________
____

17. About what % of tota each agency bear? (W
Name: ____________
____
____
____

E. How Will t

20. Intended methods of

Method
G.O. Bond
Revenue Bond
Loan
Financing Agreement
Other

21. Intended sources of a

Methods	**Perc**
User charges	
PIF revenue	
Property tax	
Other	

22. A system of user char
    - ☐ Surcharge for exc
    - ☐ Variable rates for
    - ☐ Rates established

23. What effect will finan agency's other financ
    - ☐ Will create severe
    - ☐ Will require mode
    - ☐ Will not constrain

RMATION*

First **Full** Year of System Operation: 19______
Description of Proposed Improvements:

WORKSHEET #6

Agency ______________________
Date ______________________

D. What Roles and Responsibilities Will Local Government Have? (See Worksheet #4)

15. What agencies will:
- Own the wastewater facilities?______________________
- Operate the facilities?______________________
- Finance the construction costs? ______________________

16. Will system costs be shared among two or more agencies? Yes ☐ No ☐
Names: ______________ ______________
______________ ______________

17. About what % of total local capital costs will each agency bear? (Worksheet #4, Line 8)
Name: ______________________ %
______________________ %
______________________ %
______________________ %

18. A sewer use ordinance will be adopted that: (Worksheet #4, Part C)

Yes	No	
☐	☐	Requires developed areas to hook in
☐	☐	Establishes system extension policies
☐	☐	Sets minimum design standards
☐	☐	Requires public ownership of collection lines
☐	☐	Prohibits discharge of toxic substances
☐	☐	Prohibits illegal connections to system

19. Will an intergovernmental agreement be established to assure cooperative mutual support among involved agencies for financial and institutional implementation? (Worksheet #4, Part D)
Yes ☐ No ☐

E. How Will the Facilities be Financed? (See Worksheet #5)

20. Intended methods of financing capital costs: (Worksheet #5, Line 23).

Method	Financing Agency	Amount to be Financed	Interest Rate	Term of Maturity	Annual Debt Repayment
G.O. Bond		$	%	years	$ per year
Revenue Bond		$	%	years	$ per year
Loan		$	%	years	$ per year
Financing Agreement		$	%	years	$ per year
Other		$	%	years	$ per year

21. Intended sources of annual operating income:

Methods	Percentage of Total Revenue
User charges	%
PIF revenue	%
Property tax	%
Other	%

22. A system of user charges will be established that includes:
☐ Surcharge for excessive flow
☐ Variable rates for strength of flow
☐ Rates established for various classes of users

23. What effect will financing the agency's share of local costs for the proposed system have on the agency's other financial commitments?
☐ Will create severe limitations
☐ Will require moderate commitment
☐ Will not constrain other activities at all

Instructions

1. Worksheet #6 is the last of a series of financial and institutional planning aids which have been filled out by agencies involved in a wastewater facility planning process. It summarizes the results of the financial and institutional analyses conducted by the agency named above during preliminary planning.
2. Worksheet #6 is to be filled out after completion of Worksheets #1 through 5. The results and responses obtained on those worksheets are to be entered in the appropriate spaces on Worksheet #6 as indicated.
3. Worksheet #6 may be used as an information sheet to be handed out to those attending the public hearing for presentation of the facility alternatives. Note that the information contained on this worksheet represents assumptions about financial and institutional information which may be accurate today but are subject to change as planning, design, and construction progress.

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APPENDIX IV-C A GUIDE TO FINANCIAL MANAGEMENT FOR SMALL UTILITIES, NATIONAL DEMONSTRATION WATER PROJECT.

INTRODUCTION

This guide to financial management was written for the staff and decision-makers of small water and wastewater utilities. Each topic has been discussed in non-technical terms to provide the reader with a clearer understanding of the financial management process.

ABOUT THE GUIDE...

The Great Lakes Rural Network developed the guide for the National Demonstration Water Project. It is to be used in conjunction with a series of workshops conducted as part of the 1984 COMPTRAIN project. COMPTRAIN is a training and technical assistance project designed to bring small water and wastewater treatment plants into compliance with federal-state performance standards.

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TABLE OF CONTENTS

	PAGE
The Financial Management Process	1 - 2
Planning	3 - 8b
Budgeting	9 - 15
Financing	16 - 24a
Cost Recovery	25 - 28
Record Keeping/Management Information	29 - 34
Reference	35 - 36
Exhibits	1 - 34

MANAGING MONEY

AN OVERVIEW
OF
FINANCIAL MANAGEMENT

- How do you decide where your going?
- How do you get the money you need to build your system?
- How much does it cost to operate?
- How are you going to spend your money?
- How are you going to be sure everyone pays their fair share?
- How do you know where you've been?
- How well did you do?

"These questions will help you find ways to face your problems".

Financial Management Involves:

- Planning
- Financing
- Budgeting
- Cost Recovery
- Record Keeping
- Information

PLANNING

UTILITY PLANNING

A framework for planning is essential, especially for the small utility. Taking the time to plan now will provide you with two essential tools:

WHAT STEPS TO TAKE

- a formal (or informal) document illustrating existing and future needs
- a "checklist" to measure progress toward the accomplishment of the plan (goals and objectives)

FACTORS AFFECTING PLANNING

A number of factors affect the planning process. They include:

- current wastewater and/or water supply demands
- anticipated levels of demand current year
- anticipated resource needs

Planning is like following a road map to go from one place to another. You decide where you want to end up, what route your going to take, and how long it will take to get there.

124<

EFFECTIVE PLANNING: WHAT IS NEEDED?

Planning requires:

- budgeting sufficient time and funds for planning
- Involving plant supervisors (OPERATORS) in the planning process
- A commitment to determining the current and future needs
- Public involvement
- Comprehensive planning is necessary

Remember these...

KEY ELEMENTS OF PLANNING

The key elements of planning are:

- Policy setting
- Problem identification
- Implementing the planning process

PLANNING INVOLVES TWO PROCESSES

Utility planning includes two separate, but related planning processes. They are:

- Capital planning
- Operations planning

WHAT IS CAPITAL PLANNING?

IT INCLUDES IDENTIFICATION OF YOUR UTILITY'S CAPITAL NEEDS OVER A PERIOD OF TIME.

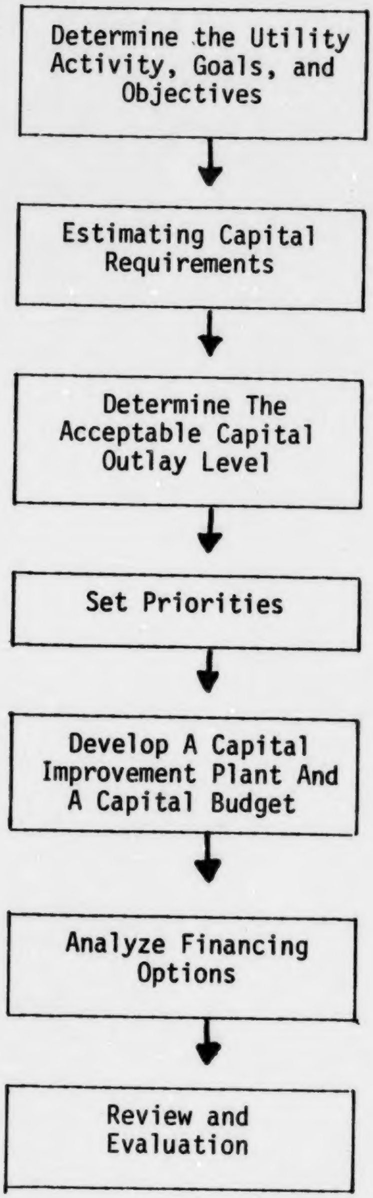
WHO SHOULD BE INVOLVED?

Participation from all operating levels of your system is essential. This includes:

- PLANT STAFF
- CLERK
- RECORDER
- CONSULTING ENGINEER
- BOARD CHAIRPERSON (MAYOR)

STEPS IN CAPITAL PLANNING

Follow these steps...


Determine the Utility Activity, Goals, and Objectives
Estimating Capital Requirements
Determine The Acceptable Capital Outlay Level
Set Priorities
Develop A Capital Improvement Plant And A Capital Budget
Analyze Financing Options
Review and Evaluation

OPERATIONS PLANNING

Operations planning facilitates the achievement of your plant's operating objectives.

WHAT IS INVOLVED IN OPERATIONS PLANNING?

Your efficiency and effectiveness can be measured...

- Establishing operating objectives
- Estimating about staff and resource needs
- Setting performance criteria and standards

USE OBJECTIVES TO DEVELOP BUDGET REQUESTS

The following questions should be addressed when developing budget requests:

You can use the operations plan to prepare your budget request.

- How much service is needed to meet your objectives?
- How much work must be performed to meet the service demand?
- What are the personnel, materials, and equipment requirements for effective operational performance?

Everyone needs check points.

REVIEWING PERFORMANCE PERIODICALLY

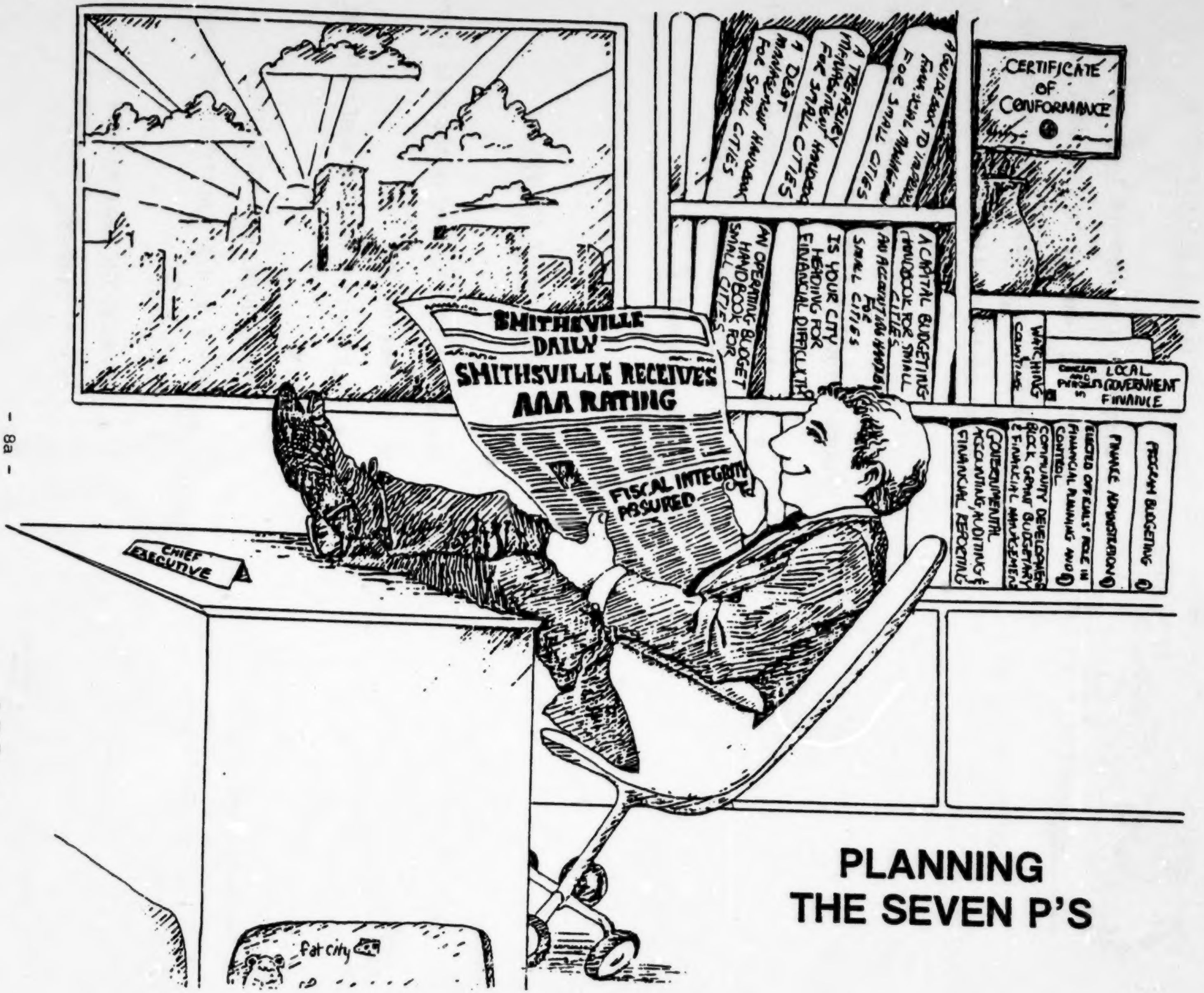
Ask these questions:

- IS PERFORMANCE ON SCHEDULE?
- ARE COSTS HIGHER OR LOWER THAN PLANNED?

PROBLEMS IN PLANNING

- Inadequate operational plan
- Inadequate capital improvement plan
- Crisis management
- Incapacity to respond to revenue and appropriation limitations

129<


CERTIFICATE OF CONFORMANCE
A GUIDEBOOK TO IMPROVED FINANCIAL MANAGEMENT FOR SMALL CITIES
A TREASURY MANAGEMENT HANDBOOK FOR SMALL CITIES
A DEBT MANAGEMENT HANDBOOK FOR SMALL CITIES
A CAPITAL BUDGETING HANDBOOK FOR SMALL CITIES
AN ACCOUNTING HANDBOOK FOR SMALL CITIES
IS YOUR CITY HEADING FOR FINANCIAL DIFFICULTY
AN OPERATING BUDGET HANDBOOK FOR SMALL CITIES
WATCHING & COUNTING
CONCEPTS AND PRACTICES IN LOCAL GOVERNMENT FINANCE
PROGRAM BUDGETING
FINANCE ADMINISTRATION
ELECTED OFFICIALS' ROLE IN FINANCIAL PLANNING AND CONTROL
COMMUNITY DEVELOPMENT BLOCK GRANT BUDGETARY & FINANCIAL MANAGEMENT
GOVERNMENTAL ACCOUNTING, AUDITING & FINANCIAL REPORTING
SMITHSVILLE DAILY
SMITHSVILLE RECEIVES AAA RATING
FISCAL INTEGRITY ASSURED
CHIEF EXECUTIVE
fat city

PLANNING
THE SEVEN P'S

BUDGETING

WATER DEPT
MANAGER

KNOWING WHERE THE MONEY GOES

WHAT IS BUDGET?

A budget is a management tool used to PLAN, ADMINISTER, and PROVIDE PAST DATA about your utility's fiscal operations during a given period of time.

There are a number of different types of budgets including:

- OPERATING BUDGET (income & expense)
- CAPITAL-EXPENSE BUDGETS
- CASH BUDGETS

THE BUDGET PROCESS

The budget also serves as the main source of information for:

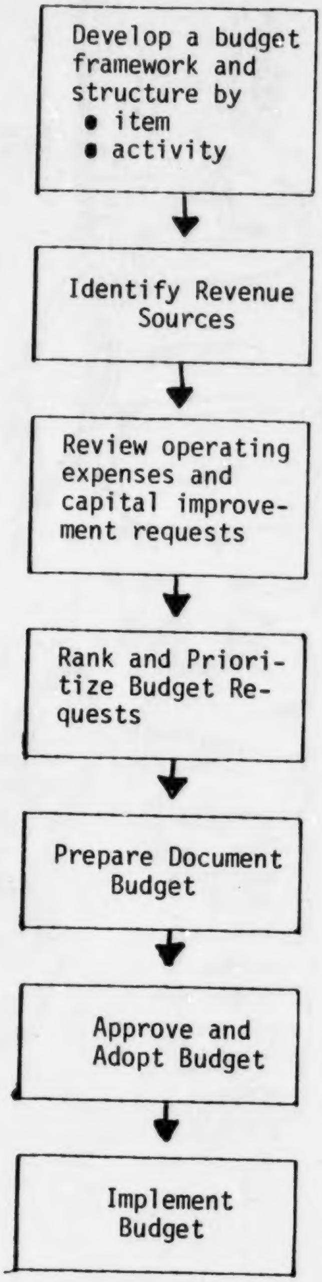
- ILLUSTRATING HOW THE MONEY WILL BE SPENT
- ESTABLISHING WORK PRIORITIES
- MEASURING THE QUALITY OF THE WORK PERFORMED
- ENSURING THE AVAILABILITY OF RESOURCES TO MEET EXPENSES

The budget can help you define the goals of your system in terms of money.

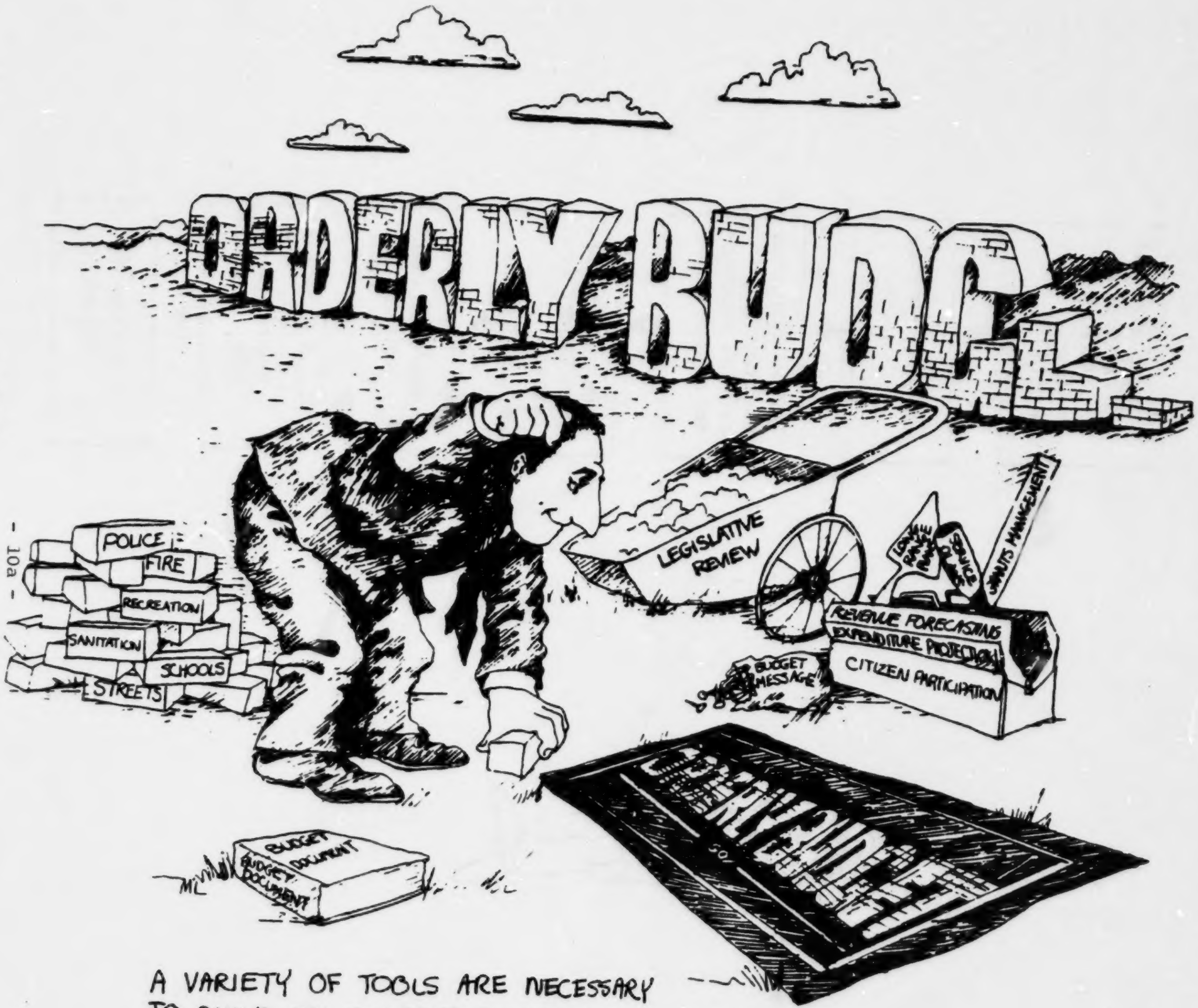
131<

STEPS IN THE BUDGET PROCESS

The budgeting process includes a number of steps:


Develop a budget framework and structure by
• item
• activity
Identify Revenue Sources
Review operating expenses and capital improvement requests
Rank and Prioritize Budget Requests
Prepare Document Budget
Approve and Adopt Budget
Implement Budget

One step at a time...


ORDERLY BUDG
POLICE
FIRE
RECREATION
SANITATION
SCHOOLS
STREETS
LEGISLATIVE REVIEW
BUDGET MESSAGE
LONG RANGE
SERVICE
GRANTS MANAGEMENT
REVENUE FORECASTING
EXPENDITURE PROJECTION
CITIZEN PARTICIPATION
BUDGET DOCUMENT
BUDGET DOCUMENT
ORDERLY BUDGET
ML

A VARIETY OF TOOLS ARE NECESSARY
TO BUILD AN ORDERLY BUDGET.

THE BUDGET FRAMEWORK

Developing a budget framework a structure around which budget requests can be identified and allocated. The budget framework provides a mechanism for identifying and reporting actual expenses.

Within the budget framework, the operating budget should reflect the major functions of your utility.

State statutes or local ordinances may dictate that the budget appear in a "line item" format. Line items may be direct or indirect. Here are examples of direct and indirect expenses:

Direct

- operating expenses for materials, supplies, travel, utilities, and chemicals
- maintenance expenses for vehicles, equipment and buildings
- equipment purchases
- salaries, overtime and longevity pay

Indirect

- debt service for principal payment and interest on debt
- fringe benefits for pensions, employee insurance, vacation, and sick pay
- overhead for support services such as accounting, revenue collection and investment costs

IDENTIFYING REVENUE SOURCES

You should identify each source of revenue by the type and amount. Examples of revenue sources are:

- SERVICE CHARGES
- GENERAL PROPERTY TAXES
- FEES
- INTERESTS ON INVESTMENTS

RANKING AND PRIORITIZING BUDGET REQUESTS

Give these issues some thought

The following issues should be addressed:

- ARE COSTS REALISTIC?
- ARE THEY BASED ON PAST PERFORMANCE?
- IS STAFF TIME BEING USED EFFECIENTLY?
- ARE THERE WAYS TO KEEP WAGES AND SALARY EXPENSES AT A MINIMUM?

REVIEWING THE EXISTING RATE STRUCTURE

Design the budget document so that it can provide you with information about your system's operations and requirements.

The document should consist of a narrative describing:

- THE UTILITY OPERATION
- MAJOR ASSUMPTIONS
- THE BUDGET
- MAJOR ISSUES THE GOVERNING BODY SHOULD ADDRESS
- SIGNIFICANT CHANGES IN THE PROPOSED BUDGET FROM THE CURRENT YEAR
- ANY CHANGES THE BUDGET MAY HAVE ON SERVICE CHARGES

A sample budget format is in the reference section. Exhibit # 25 & 26

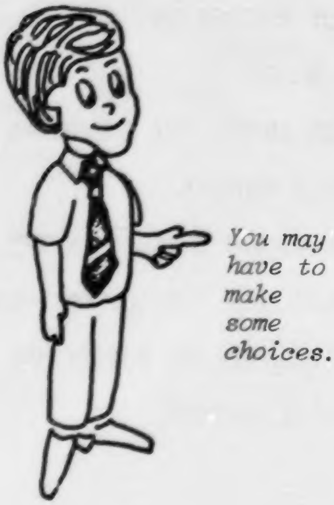
IMPLEMENTING THE BUDGET

Two steps are involved in budget implementation:

- ALLOCATION
- CONTROL AND MONITORING

CONTROLLING AND MONITORING THE BUDGET

Periodic budget to actual reports should be prepared to sufficiently monitor performance and expenses. These reports should be prepared each month. If income is down or expenses are up from the estimated amounts, one or more of the following actions may be required:


You may have to make some choices.

- PRIORITIES MAY HAVE TO BE REVISED AND SOME EXPENSES MAY HAVE TO BE CUT
- SOME EXPENSES MAY HAVE TO BE DELAYED
- EXPENSES MAY HAVE TO BE APPROVED AS BUDGETED FROM CASH RESERVES

Who should be involved in the budgeting process?

It is critical to involve the key staff and decisionmakers in this process, including:

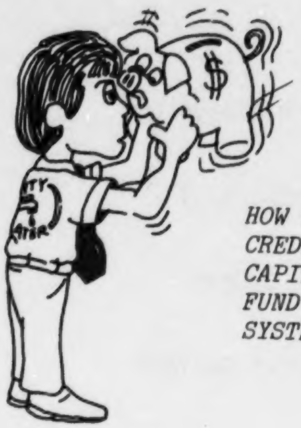
- TREATMENT PLANT SUPERVISOR (Operator)
- CLERK
- RECORDER
- BOARD CHAIRPERSON or MAYOR

137<

PROBLEMS IN BUDGETING

- Not Enough Money
- Capital Budgets Are Always Cut
- Reliance On The Property Tax
- Inadequate Revenue Budget
- Inadequate Analytical Reviews
- Excessive Transfers
- Inadequate Budget Controls
- No Activity Budgets

CAPITAL FINANCING



HOW TO GET THE CREDIT AND CAPITAL TO FUND YOUR SYSTEM

- Where do you get the money to build a new plant?
- What do you do if you can't sell bonds?
- How do you know if you can afford the new system?

Types of financing for capital projects are:

- U.S. EPA Construction Grants
- Farmer's Home Administration
- Housing and Urban Development
- Local Banks
- State Loans
- Investment Bankers
- Municipal Lease
- Sale Leaseback
- Sale - Service Contract
- Full Service Contract

Grants

Grants... "Money you get to keep"

Are there federal or state programs to help?

- U.S. EPA's Construction Grants
- Farmer's Home Administration (FmHA)
- Housing and Urban Development (HUD) Community Development Block Grants (CDBG)

139<

EPA'S CONSTRUCTION GRANTS

EPA is one source...

What do you have to do to get one?

- Your project has to be eligible.
- It has to be on the State's priority list.
- You have to submit a plan and a final design.
- You have to apply.

How much can you get?

- You can get 55% of the costs of eligible projects.
- 65% if its clever (I/A).

What projects are eligible?

- Sewage treatment plants
- Sludge disposal
- Some interceptor/Pump Stations
- Collection systems never move (at least for now)
- Build for today (no reserve capacity)

How long will it last?

Nothing is forever.

- 1985
- 1988
- And beyond

What costs are eligible?

- Most building costs (brick & block)
- Inspection and engineering during construction
- An allowance for planning and design
- No land costs
- No financing costs

FARMER'S HOME ADMINISTRATION

FmHA is another source of funds for small communities.

- You have to be rural
- You have to be small
- May be based on need
- Will pay for construction related costs.

HOUSING AND URBAN DEVELOPMENT

Try the CDBG program...

Community Development Block Grants

Requirements may vary from state to state, but most grants are based on:

- NEED (assisting low-income persons)
- PROGRAM IMPACT
    - resolving threats to health/ safety
    - improving public facilities

141

LOANS AND BONDS

Money you have to pay back.

Who will lend you the money?

- Local Banks
- State Loan Programs
- Farmer's Home Administration
- Investment Bankers (Wall Street, here I come)

What will it cost you?

- Low Interest Rates (FmHA, States)
- Tax Exempt Rates
- Financing and Legal Fees
- Application Fees
- Reserves

How long should you borrow?

- Life of the project
- FmHA (Is longer really better?)

GENERAL OBLIGATION BONDS

Consider all the aspects.

- Full faith and credit (Everything you've got)
- Taxing power
- Taxing exempt - low interest cost
- May need voters to approve
- Debt limits - Do they limit?
- What's in a bond rating?
- What about bond insurance?

REVENUE BONDS

- Supported by user charges ONLY
- Rates may be higher
- Coverage Requirements
- Reserve Funds

Get private companies into the act.

CREATIVE FINANCING

What do you do if you can't borrow or DON'T want to?

- Municipal Lease
- Sale - Leaseback
- Sale - Service Contract
- Full Service Contract

CREATIVE FINANCING TECHNIQUES

New Facilities

- Municipal Lease
- Service Contract

Existing Facilities

- Sale - Leaseback
- Sale - Service Contract

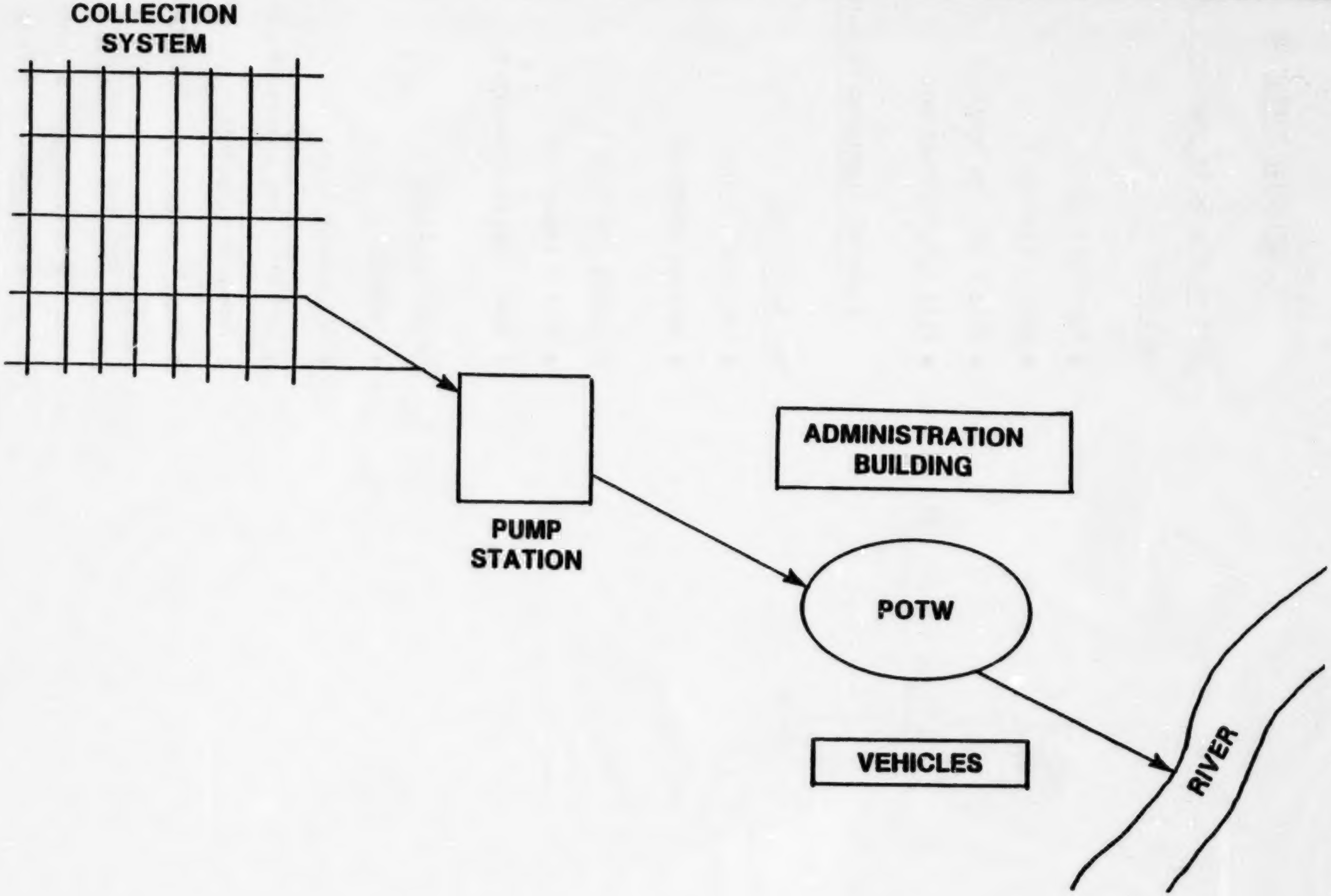
Municipal Lease

- Conditional Sale
- Tax-Exempt Rates
- Community has possession and control
- Purchase at end 1$
- Year-To-Year - Not long term debt

Included in municipal lease

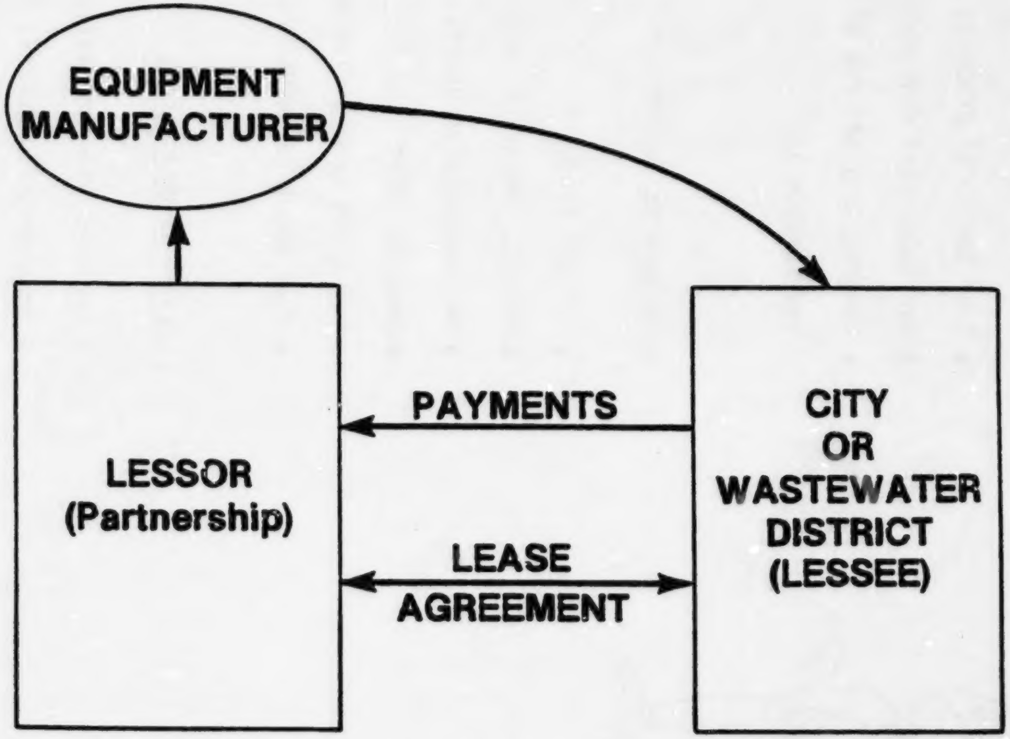
- Buildings
- Equipment
- Vehicles
- Pump Station
- Plant

WHAT CAN WE FINANCE?


COLLECTION SYSTEM
PUMP STATION
ADMINISTRATION BUILDING
POTW
VEHICLES
RIVER

NEW FACILITIES

MUNICIPAL LEASE


EQUIPMENT MANUFACTURER
LESSOR (Partnership)
PAYMENTS
LEASE AGREEMENT
CITY OR WASTEWATER DISTRICT (LESSEE)

One of these options may work for you.

Sale-Leaseback

- Sell the tax deductions - depreciation
- Can sell construction grant projects
- Good for local projects
- Use industrial development bonds
- Congress may get rid of this, unless you operate it

Sale-Service Contract

- Turnkey projects
- Design, construct, operate
- No construction grants
- Need to enter Long Term Agreements
- How about competitive bidding requirements
- What about our NPDES Permit

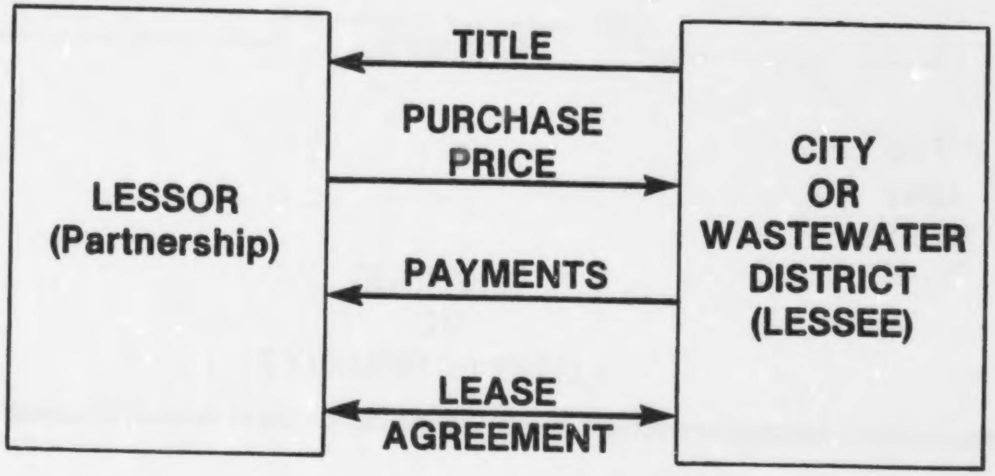
Service Contract For:

- Vehicles (Sludge Hauling Trucks)
- Equipment (Computers, Boilers, Sludge Handling)
- Pump Station
- Plant

147<

SALE - LEASEBACK

EXISTING FACILITY
OR
UPGRADE



LESSOR
(Partnership)

TITLE

PURCHASE
PRICE

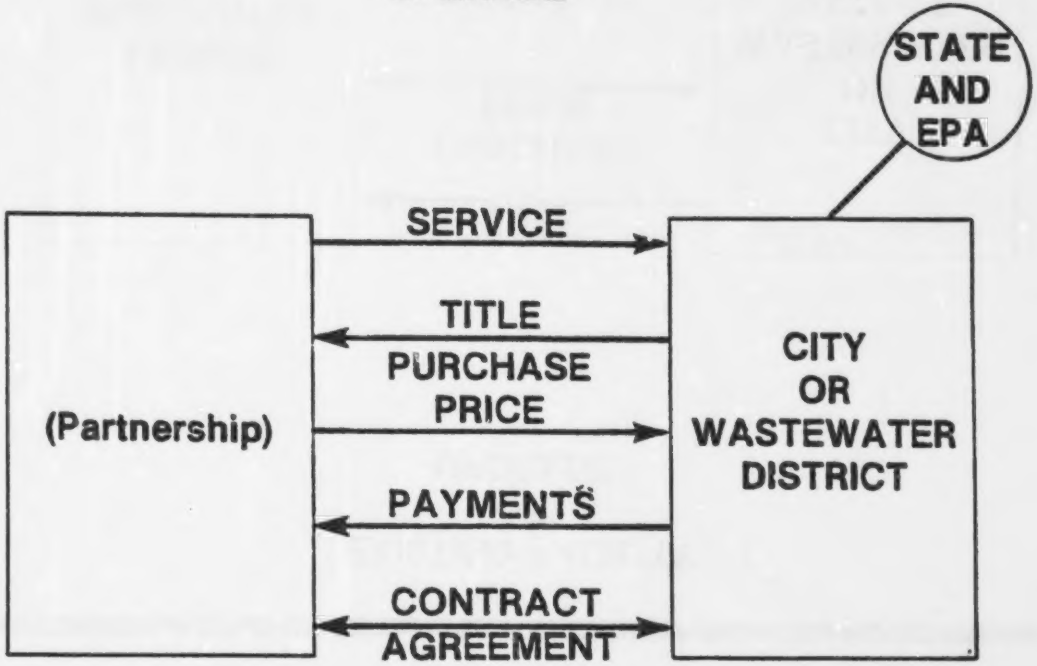
PAYMENTS

LEASE
AGREEMENT

CITY
OR
WASTEWATER
DISTRICT
(LESSEE)

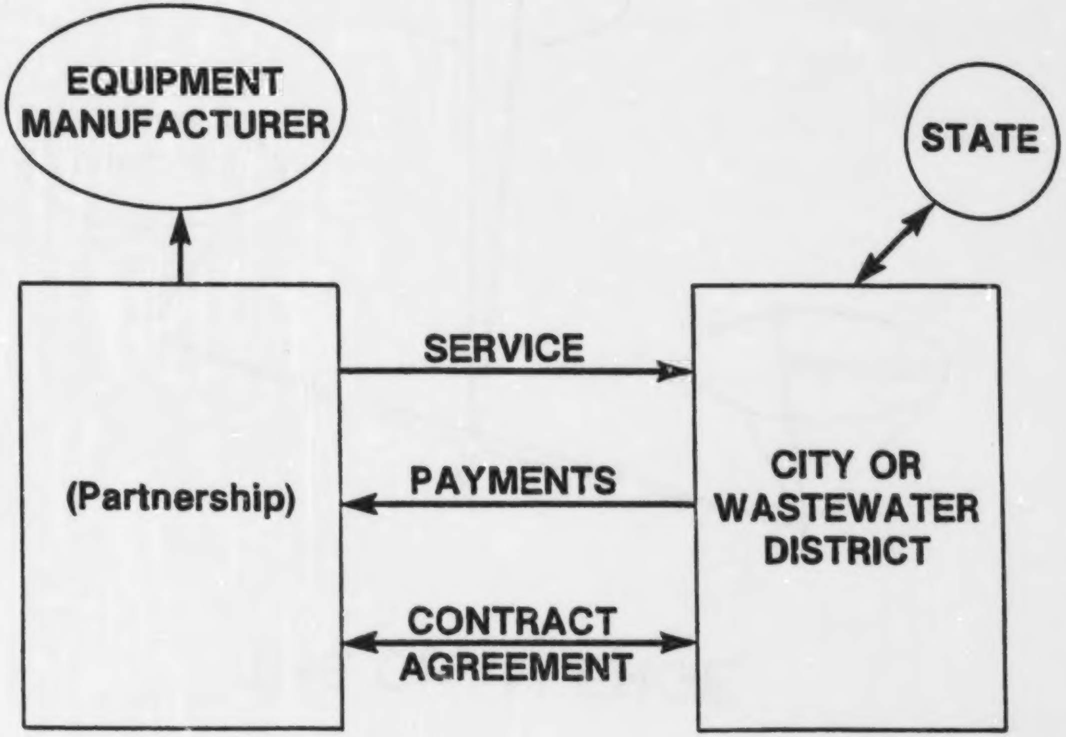
SALE SERVICE CONTRACT

EXISTING FACILITY
OR
UPGRADE


STATE
AND
EPA
SERVICE
TITLE
PURCHASE
PRICE
PAYMENTS
CONTRACT
AGREEMENT
(Partnership)
CITY
OR
WASTEWATER
DISTRICT

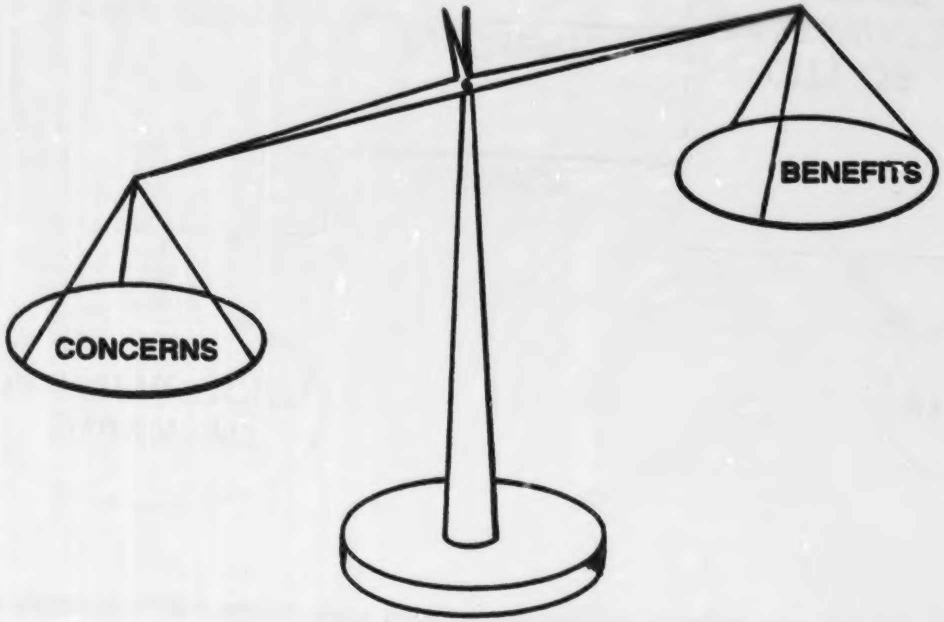
NEW FACILITIES

SERVICE CONTRACT


EQUIPMENT MANUFACTURER
STATE
SERVICE
PAYMENTS
CONTRACT AGREEMENT
(Partnership)
CITY OR WASTEWATER DISTRICT

(CONTRACT FOR SERVICES)

THE CHALLENGE


CONCERNS
BENEFITS

OVERVIEW OF FINANCING OPTIONS FOR WASTEWATER TREATMENT PLANT

FINANCING	ALTERNATIVES	OWNER	OPERATOR	TAX BENEFITS		
				DEPRECIATION		TAX CREDITS ITC
				15 YEARS ACRS	5 YEAR ACRS	
• CITY FINANCES	CITY BUILDS WITH GO OR REVENUE BOND	CITY	CITY	—	—	—
• MUNICIPAL LEASE	PRIVATE GROUP BUILDS/LEASES TO CITY	PRIVATE GROUP	CITY	ON BUILDINGS	ON EQUIPMENT	NONE
• SERVICE CONTRACT	PRIVATE GROUP BUILDS AND OPERATES FOR CITY	PRIVATE GROUP	PRIVATE GROUP	ON BUILDINGS	ON EQUIPMENT	10%

How do you know if you can afford the project?

Before you start... find answers to these questions.

- What is in the proposed project?
- Whose responsible and for what?
- How much does the project cost?
- How will I finance the construction, operation and maintenance?
- What are the annual costs per household?

What is the proposed project?

- What kind of facilities are planned?
- Do we need new sewers?
- Are they sized for growth?
- Do they have low O&M costs?

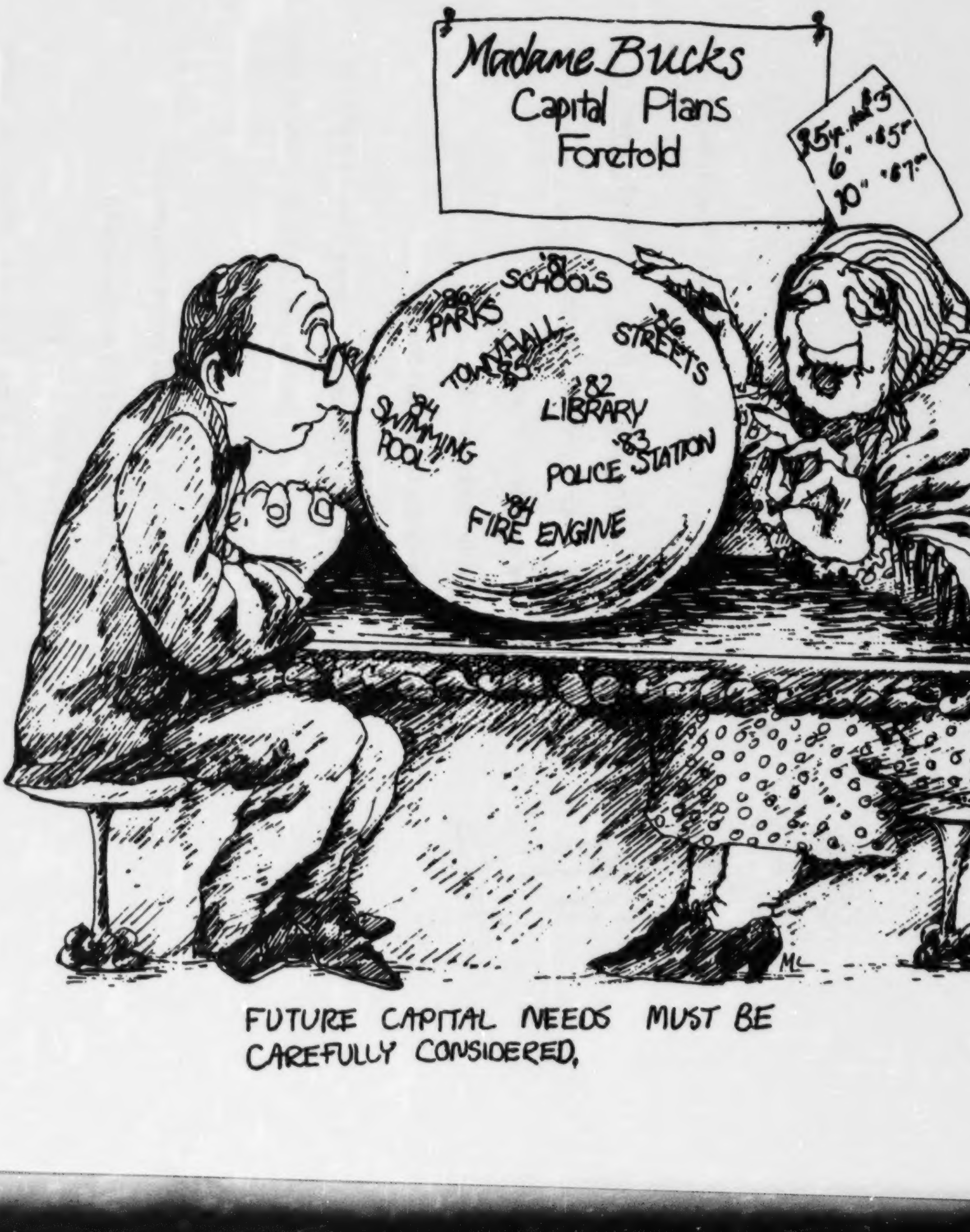
Who is responsible and for what?

- Who will own it?
- Who will operate it?
- Who will finance it?
- Do you have agreements with all large users?

How much will the project cost?

- Use current prices
- Construction Cost (Brick & Block)
- Construction related costs
- Operation & Maintenance Costs

153<


Madame Bucks
Capital Plans
Foretold
5 yr. ahead $3.50
6 " $5.50
10 " $7.00
'81 SCHOOLS
'86 PARKS
'86 STREETS
'83 TOWNHALL
'82 LIBRARY
'84 SWIMMING POOL
'83 POLICE STATION
'84 FIRE ENGINE
ML

FUTURE CAPITAL NEEDS MUST BE CAREFULLY CONSIDERED,

what are your sources of capital?

- EPA
- FmHA
- HUD
- State
- Cash on Hand
- Prepaid Connection Fees
- Special Assessments
- Local Funding

Getting this information together will help you avoid problems in the future.

What are your annual costs?

- Debt Service
- Operation, Maintenance & Replacement

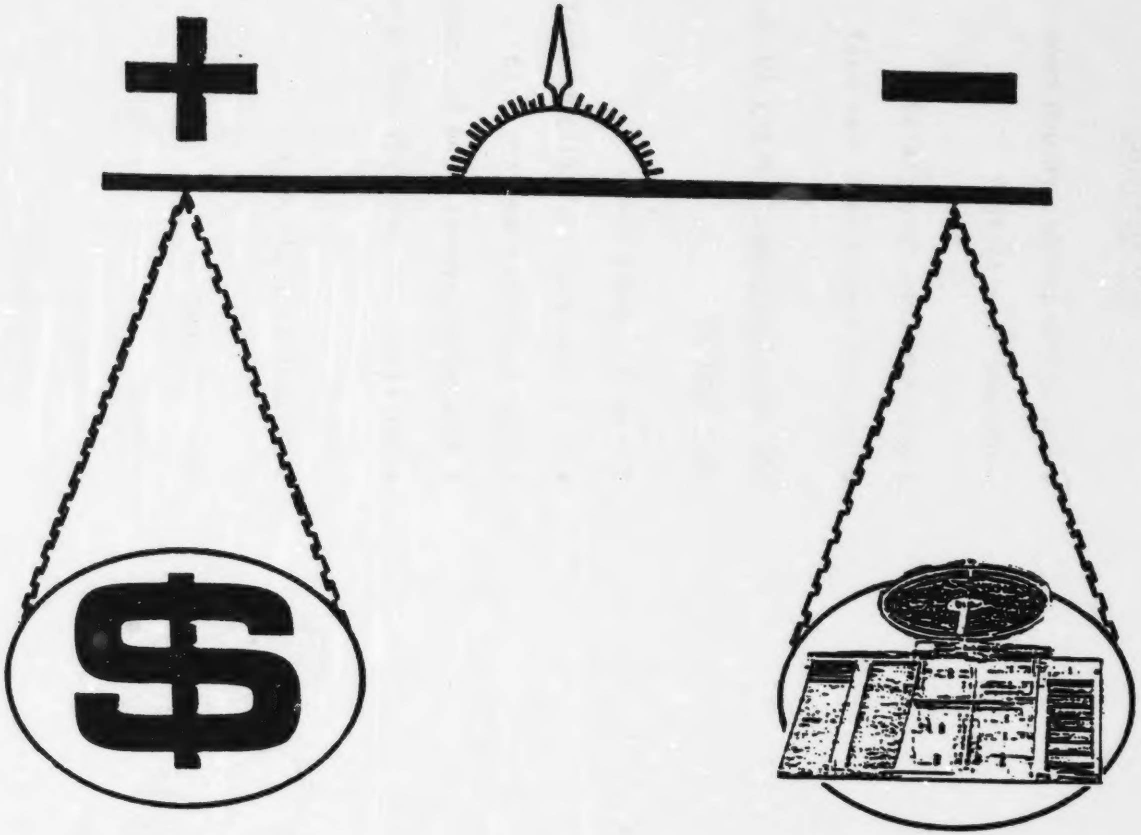
What are your sources of annual revenue?

- Sewer Service Charges
- Property Taxes
- General Funds
- Industrial Surcharges

What are the annual costs per household?

- Total $ - Nonresidential $ - Residential Costs
- Estimating Number of Households
- Average Costs Per Household
- Other Annual Costs
- Cost Compared To Median Houshold Income

155<



DOES YOUR COMMUNITY AND ITS RESIDENTS HAVE THE FINANCIAL CAPABILITY TO PAY FOR NEW OR EXPANDED WASTEWATER FACILITIES?

COST RECOVERY

FINDING THE MONEY TO OPERATE AND MANAGE YOUR SYSTEM

KEY QUESTIONS

- How do you collect enough money to operate your system?
- What are the true costs?
- How much should each user pay?

How to collect enough money to operate your system?

- Know ALL yours costs
- Know what each part of your system costs
- Know how much money you need
- Know your customers and how much they use
- Set rates that are fair and raise enough money
- Collect what you bill

This can be a battle

Know all your costs

- Labor - The Biggest Cost
  - Wages
  - Fringe Benefits
  - Operation
  - Maintenance
  - Administrative -(You can't do it without them)

157<

- Utilities
  - Electricity - Usually the next biggest
  - Fuel Oil
  - Automotive

- Materials and Supplies
  - Chemicals
  - Spare Parts
  - Laboratory Supplies
  - Office Supplies

All these costs have to be considered.

- Expenses
  - Training
  - Insurance
  - Rentals
  - Services

- Capital Costs
  - Debt Service (both principal and interest)
  - Capital Reserves

- Overhead
  - Personnel
  - Purchasing
  - Town Clerk

A budget form like the one shown in exhibit # 26 will help...

Know what each part of your system costs

- Collection System
- Pumping Stations
- Plant Operations
- Maintenance
- Laboratory
- Sludge Disposal
- Administrator

Decide how much money you need

(Revenue Requirements in the Jargon)

- Total Costs
- Spread Over Each Operation
- Subtract Any Money You Have Available
- What's Left Comes From Customers

Know your customers and how much they use

(Cost of Service)

- Types of Customers
  - Residential
  - Industrial
  - Commercial
- How Much Do They Use
  - Water Records
  - High Strength

159<

These points are very important.

Set rates that are fair - Match rates to costs

- Based on Water Records
- Based on Property Value
- Flat rate
- Special Assessments
- Surcharges
- Connection Fees

Collect what you bill

(How to deal with delinquents)

- Deposits
- Payment in Advance
- Refuse Service
- Sheet of Service
- Make the Property Owner Liable
- Lien the Property
- Discounts for Prompt Payment
- Charge Interest or Penalties

Problems with cost recovery

- User fees do not recover total costs
- User fees are not equitable
- User fees do not comply with regulations
- Assessment authority is limited
- Facility is not self-supporting

RECORD KEEPING/MANAGEMENT INFORMATION

CITY
W
BILLS

KEEPING TRACK OF INFORMATION

RECORD KEEPING

(Accounting Systems)

What does record keeping do?

- Let you keep track of your costs
- See how your plant is doing
- Account for taxpayers money

Types of accounting system

- Fund Accounting - Lots of buckets
- Enterprise Funds - Treat it like a business
- Cash Basis Accounting - Just like your checkbook
- Accrual Basis Accounting - Somethings last a long time
- Depreciation - Your plant is weaving out

CHART OF ACCOUNTS

(Types of Costs)

- Personal Services
  - Wages
  - Fringe Benefits
  - Operations
  - Maintenance

161<

- Materials and Supplies
  - Chemicals
  - Spare Parts
- Utilities
  - Electricity
  - Fuel Oil
  - Automotive
- Equipment Replacement
- Depreciation
- Debt Service

MANAGING INFORMATION BEFORE IT MANAGES YOU

MANAGEMENT INFORMATION

- By the time you find out what your problems are, your out of compliance or out of money.
- You get information, but don't know what it means.
- The way the information is presented, doesn't do you any good.
- There is too much information for you to review.

Make reports work for you, not against you.

What should reports tell you?

- How your plant is running
- How much it is costing
- Do you have enough money
- What condition your plant is in
- When you will have to maintain equipment
- When you will have to replace equipment
- Where can you purchase certain material

What types of reports do you need?

- Operating Reports
- Financial Reports
- Maintenance Reports
- Purchasing Reports

OPERATING REPORTS

What do operating reports tell you?

- How your plant is doing
- Are you in compliance
- Is your plant operating differently than it has before
- How much energy did you use, How much chemicals

Reports can help you figure out where you're going.

163<

PLANT PERFORMANCE REPORT

- What does it tell me?
  - How my plant is doing everyday
  - How much flow is coming in
  - What is the weather like
  - What is the strength of the work
  - How much waste am I removing
  - Am I in compliance

Don't forget information on plant performance!

- What kind of information is in my report?
  - Rainfall
  - Flow coming in
  - Strength of waste coming in BOD/ Suspended Solids/PH/Coliforms
  - Strength of waste going out

FINANCIAL REPORTS

- What are they for?
  - To tell the council, the citizens, or the banks about the financial condition of the utility
  - To help the Superintendent control the costs of the plant

- What type of financial reports do you need?

How much did you say you would spend, and how much did you really spend?

How much money is coming in, and does it cover your costs?

How much is the plant worth?

How much did treatment cost?

  - Monthly Budget To Actual Report
  - Monthly Revenue Reports
  - Balance Sheet
  - Cost-of-Service Reports

SEE EXHIBIT #'s 17, 18, & 19

MAINTENANCE REPORTS

- What do they tell you?

Maintenance should be a part of your regular routine.

  - What type of maintenance was done
  - What needs to be done soon
  - Was some scheduled maintenance skipped, WHY
  - What spare parts did I use
  - How much time did I spend, and how much did it cost
  - Is some equipment breaking down too often

Sample Forms

- Equipment Record (SEE EXHIBIT #8)
- Preventive Maintenance (SEE EXHIBIT #9)
- Corrective Maintenance (SEE EXHIBIT #14 & 15)

PURCHASING REPORTS

Sometimes the details of purchasing are overlooked.

What do they tell you?

- How long have you had purchase orders outstanding
- When do you expect them to be delivered
- What suppliers are available
- What spare parts do you stock, how many

Types of reports

- Purchase Order Status Reports
- Spare Parts Files
- Vendor Files

Problems with accounting and financial reporting

- Total costs are not identified
- Inadequate budget controls
- Inadequate cash flow
- Uniformative financial reports

REFERENCES

Some additional information to help you with...

PURCHASING

Policy
Key roles
Purchase orders
Limited purchase orders
Request for quotations
Vendor list
Vendor checklist

EQUIPMENT

Record card
Inventory record card
Stock activity report description
Stock activity report example

MAINTENANCE SCHEDULING

Weekly Schedule
Record Card

167<

REPORTING

- Financial Model
- Incurred Costs/Dispersed Funds
- Budget To Actual Expenses
- Budget To Actual Revenues
- Balance Sheet
- Statement of Revenues

BILLING

- The Process
- A Way To Think About Billing

BUDGETS

- Line Item
- Activity

DETERMINING FINANCIAL CAPABILITIES

- Facilities Cost Worksheets

PURCHASING

Purchasing is buying the right material at the best price in the proper quantity at the proper time and from the best supplier. The plant supervisor is generally not responsible for all of the above aspects of the purchasing function. The plant supervisor frequently must:

- Adhere to municipal purchasing policies
- Participate in purchasing procedures which are external to the system
- Maintain separate records for purchased goods, vendor suppliers and goods received
- Provide requisitions for purchasing through a central pruchasing agent.

Guidelines for Purchasing:

Policy

A purchasing system needs to be flexible and responsive to changing conditions. Key elements of the policy should include:

1. Standards of conduct should include:
    - unprejudiced buying
    - forbidden practices (such as collusion)
    - vendor relations (maintaining objective relationships)
    - educational development.
2. Purchasing Limits and Authority should include:
    - Limited Purchase Item: a purchase of goods or services costing less than $100, requires a Limited Purchase Order and may be authorized by the utility supervisor (operator).
    - Verbal Quote Item: a purchase of goods or services costing between $100 and $750, requires a Purchase Order, three verbal quotes from vendors and may be authorized by the utility supervisor (operator).
    - Written Quote Item: a purchase of goods or services costing $751 - $4,000, requires a Purchase Order; Request for Quotation; a minimum of three written quotes from approved vendors and must be authorized by the Mayor or Board Chairperson.
    - Sealed Bid Items: a purchase of goods or services costing more than $4,000, requires a Purchase Order; Request for Quotation; a sealed bid procedure and must be authorized by the Board Chairperson within the utility.

3. Exceptions should be provided for:

- Emergency orders - when the public's health, welfare or safety is in jeopardy or the utility is in danger of extensive damage, an emergency order may be issued for corrective action without following standard purchasing policy. The declaration and action must be authorized by the Mayor or Board Chairperson.

- Confirming orders - in special cases, not qualifying as emergency situations, but critical to the successful operation of the utility, Mayor or Board Chairperson may approve the verbal purchase of a good or service, followed by a confirming purchase order. Confirming orders should not be permitted for sealed bid items.

THE AUTHORITY TO PURCHASE...

KEY ROLES

Governing Body: responsible for overall adherence to purchasing policy and control. This function complies with and enforces maximum purchase requirements established by statute or ordinance. This function indirectly controls day to day purchasing through the appointment of various supervisors and/or managers. This function oversees the selection of all vendors and release of purchase orders.

Utility Supervisor in consultation with Board Chairperson: responsible for coordinating and reviewing all purchases above the limited purchase order amount. Reviews would consist of:

- reasonable need for the item
- proper vendor selection
- timely order and anticipated delivery
- review of bid specifications and submissions for consistency and meeting of requirements
- identifying duplicate purchases
- monitoring price fluctuations
- identifying joint or cooperative purchase opportunities

Utility Supervisor (operator): responsible for the origination of all purchase orders issued from the utility. Authority to purchase is for limited local purchase and verbal quote items. Purchase requests for other than these items are routed to the Board Chairperson for review, quote and approval through the purchasing cycle.

This position would monitor and recommend approved vendors for limited purchase orders. This position is responsible for assembling specifications, assisted as required by technical specialists, for bid items.

Clerk: responsible for test and review for availability of budgeted funds. Authority to hold or postpone a purchase until funds availability questions are resolved with Board Chairperson and the plant's supervisor.

PURCHASE ORDERS

The purchase order is a key document in an effective purchasing system. It should:

- Provide adequate space for vendor and utility name, address, vendor contact, and phone number.
- Enable all items ordered to be included in one order with space for:
  - commodity (stock item) number or code
  - description and quantity ordered
  - unit price and payment terms
  - total anticipated price
  - scheduled delivery date
  - shipping terms
- Trace the vendor quotes received
- Identify vendor selection process
- Provide for authorizations and signatures
- Indicate purchase order copy distribution
- Contain a prenumbered reference for control purposes.

Format - the format of the purchase order should supply the utility the following information:

- Request for vendor delivery
- Price agreement
- Vendor tracking system
- Accounting approval for payment
- Payment voucher.

LIMITED PURCHASE ORDERS

When do they apply? Using an approved vendor, the following situations call for a limited purchase order:

- The commodity must cost less than $100.
- Budgeted funds must be available to pay for the order.
- The vendor must be established and authorized.
- The expenditure must be justified.

LIMITED PURCHASE ORDER

Vendor Name
Address
No.______
Attn:____________________ Phone________

Utility Name
Address
Attn:_______________ Phone______

LPO #
______

Quantity	Description	Comm. No.	Unit Price	Total Price
1.				
2.				
3.				
		Total (less than $100.00)		$

Justification

1. Account No:
2. Account No:
3. Account No:

Authorized By________________________________ Date______________________

Paid By____________________________________ Date______________ Check No.______

DISTRIBUTION: White: Vendor Pink: Utility Blue: Accounting

REQUEST FOR QUOTATION
(THIS IS NOT AN ORDER)

TO:
Vendor Name
Address

Attn: Phone:

FROM:
Utility Name
Address

Attn: Phone:

P.O. Reference No.____________

Dear Vendor,

Please provide a unit price quotation for the goods and/or services described below. Keep the attached duplicate copy and return the original to the above address. Explain any substitutes or modifications to the description completely. YOUR QUOTATION MUST BE IN OUR OFFICE AT THE ABOVE ADDRESS BY: (a.m./p.m.) 19

Delivery to be made from__________________in_____ days from receipt of order.

Terms:____estimated shipping weight____lbs.

ITEM	QUANTITY	DESCRIPTION OF GOODS AND/OR SERVICES	UNIT PRICE

We quote you as noted above:

Signed: Title: Date:

VENDOR LIST

Revised____________

For Quotation Reference

P.O. Number:________________

Date Sumbitted:______________

Vendor RFQ	Vendor Name	Vendor Number	Address	Contact Person	Phone	Commodities

VENDOR EVALUATION CHECKLIST

CRITERIA	VENDOR A: ______ RATING			VENDOR B: ______ RATING			VENDOR C: ______ RATING		
1. Lowest Price	low	medium	high	low	medium	high	low	medium	high
2. Delivery Date	first	second	third	first	second	third	first	second	third
3. Post Performance	low	average	high	low	average	high	low	average	high
4. Freight/Delivery	low	medium	high	low	medium	high	low	medium	high
5. Discount Offered	low	medium	high	low	medium	high	low	medium	high
6. Multi-Commodity	low	medium	high	low	medium	high	low	medium	high
7. Type of Commodity	brand name	replacement	tooled	brand name	replacement	tooled	brand name	replacement	tooled
8. Price Adjustment Clause	yes	no		yes	no		yes	no	
9. Variation to Specifications	none	slight	substantial	none	slight	substantial	none	slight	substantial
10. Non-Collusion Clause	yes	no		yes	no		yes	no	

EQUIPMENT RECORD CARD

EQUIPMENT INVENTORY NO: CARD NO:

REFERENCE:

MANUFACTURER:

SALES & SERVICE:

DATE OF MANUF:

DATE PUT INTO SERVICE:

DATE REPLACED:

LENGTH OF SERVICE:

NAMEPLATE DATE - MODEL SERIAL NO. SIZE RPM TYPE

MOTOR DATA - MODEL SERIAL NO. FRAME TYPE CODE LETTER

H.P. VOLTS AMPS RPM HERTZ PHASE RATING DEMA DESIGN

INSULATION SERVICE FACTOR

REMARKS:

SPARE PARTS

PARTS DESCRIPTION	UNITS RECOMMENDED	INVENTORY RECORD (NO. IN STOCK & DATE)						

DATE: DESCRIPTION OF REPAIR:

PARTS REPAIRED OR REPLACED		COST	BY WHOM	MANHOURS	COST	REMARKS
TOTAL COST:	PARTS TOTAL		LABOR TOTAL			DOWNTIME:

DATE: DESCRIPTION OF REPAIR:

PARTS REPAIRED OR REPLACED		COST	BY WHOM	MANHOURS	COST	REMARKS
TOTAL COST:	PARTS TOTAL		LABOR TOTAL			DOWNTIME:

DATE: DESCRIPTION OF REPAIR:

PARTS REPAIRED OR REPLACED		COST	BY WHOM	MANHOURS	COST	REMARKS
TOTAL COST:	PARTS TOTAL		LABOR TOTAL			DOWNTIME:

PREVENTIVE MAINTENANCE RECORD

CODE	TYPE MAINTENANCE PERFORMED	CODE	TYPE MAINTENANCE PERFORMED	CODE	TYPE MAINTENANCE PERFORMED

DATE	CODE	BY WHOM	REMARKS	DATE	CODE	BY WHOM	REMARKS	DATE	CODE	BY WHOM	REMARKS

INVENTORY RECORD CARD

Commodity Class Code:____________
Description:

Minimum Stock Qty:____________
Required Lead Time:____________
Primary Vendor:____________

Maximum Stock Qty:__________
Unit of Measure:__________
Storage Location:__________

ORDERED				RECEIVED			ISSUED				BALANCE		
Date	P.O. No.	Vendor	Qty.	Date	Qty.	Amt.($)	Date	Equip.	Qty.	Amt.($)	Date	Qty.	Amt.($)

Additional Considerations:

1. Seasonal Maintenance Requirements Date____________ Quantity__________
2. New Equipment Purchase Date____________ Quantity__________
3. Other:

STOCK ACTIVITY REPORT

(Semi-Annually or on Demand)

REPORT USE	DESCRIPTION	KEY DATA ELEMENTS	DATA ELEMENT SOURCE
Utility manager uses this report to: • Identify overstocked and understocked items • Identify items which should be on hand in inventory rather than order materials • Identify duplicate stock • Determine value of inventory	A monthly report which shows the movement of inventory and stock items from the point of order through receipt and use. The report shows balances and value by commodity, and reorder point. Note: Summary cards by commodity may be maintained if EDP capabilities do not exist. Utility manager should review each card in lieu of this report.	1. Commodity Number 2. Reorder 3. Commodity Name 4. Beginning Balance Units 5. Beginning Balance Cost 6. Purchased Units 7. Purchased Unit Costs 8. Issued Units 9. Balance on Hand Unit 10. Balance on Hand Unit 11. Ending Inventory Balance	1. Purchase Order/Vendor File 2. Inventory Ticket 3. Purchase Order 4. Prior Month Report 5. Prior Month Report 6. Purchase Order 7. Purchase Order/Quote 8. Inventory Ticket 9. Calculated 10. Calculated 11. Calculated

STOCK ACTIVITY REPORT

Report #__________

For The Period: ____ - ____

Issued To:__________

Commodity Number	Reorder Point	Commodity Name	Beginning Units	Balance Unit Cost	Purchases		Units Issued	Balance on Hand		Ending Inventory Balance
					Units	Unit Cost		Units	Unit Cost	
604	22	1" Bearings	4	1.29	20	1.33	19	8		$10.64

WEEKLY MAINTENANCE WORK SCHEDULE

DAILY ITEM

1. Station Check ____________ By Pass ________ By ________
2. Lime & Sludge Pumps ____________ By ________
3. Building & Walkthrough ____________ By ________
4. Light Check ____________ By ________
5. Boiler ____________ By ________
6. Other ____________ By ________

WEEKLY ITEM

1. Clarifiers ________	4. Classifiers ________	7. Eff Pump ________
2. Detroiters ________	5. Coilfilters ________	8. Grit Pumps ________
3. Aerators ________	6. Cl_2 Pumps ________	9. Other ________

Malfunctions ____________________________________

____

SCHEDULED PROJECTS

Complete By

1. ____ ________
2. ____
3. ____
4. ____
5. ____
6. ____

LOG OF DAILY ACTIVITIES

____

____

____

____

____

____

MACHINE NO.	TYPE MACHINE:	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY

MAINTENANCE RECORD

MECHANICAL AND ELECTRICAL INSPECTIONS SCHEDULE

YEAR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
19																													
19																													
19																													

OIL CHANGE AND LUBRICATION SCHEDULE

YEAR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
19																													
19																													
19																													

DATE	WORK ORD.	DESCRIPTION OF REPAIRS AND REPLACEMENTS	DOWNTIME	MANHOURS	MATERIAL COST	TOTAL COST

PREVENTIVE MAINTENANCE RECORD

BOOMTOWN FINANCIAL MODEL

WATER BILLS	$6,240.28
TAP FEES AND SERVICE CHARGES [5]	80.00
DEPOSITS	500.00
PAST DUE RENTALS [6]	.00

SALARIES	$3,116.76
VACATION PAY	131.83
FEDERAL PAYROLL TAX	168.00
SALES TAX	.00
GASOLINE	40.36
MID STATES METERS	275.69
TRI-STATE	88.88
BOOMTOWN WHOLESALE	12.25
ED's	5.48
POST OFFICE	71.50
FmHA	$2,987.00
RESERVE ACCOUNT	250.00
POWER BILL	753.32
PAST DUE BILLS	.00
DEPRECIATION	1,000.00
	$8,901.07 [4]
METER BOX REPLACEMENT	.00
DEPOSIT IN SAVINGS	500.00
DEPOSIT IN SAVINGS DEPRECIATION, OR RESERVE	.00

[4] Remember that water bill collections should be more than expenses: $6240.28 vs $8901.07. Water bills do not exceed expenses; therefore, Boomtown experienced a loss.

[5] Tap fees and service charges can be added to rental funds because installing new meters is included in the every day activities of the operator.

[6] Past due bill funds are included with water bill collections because the present bookkeeping system does not allow easy separation.

JANUARY INCURRED COSTS AND DISPERSED FUNDS

	JANUARY EXPENSES	FUNDS DISPERSED ON JAN. EXPENSES	PAST DUE EXPENSES	TOTAL FUNDS DISPERSED IN JANUARY
Salaries	$3,116.76	$3,116.76	0.00	$3,116.76
Vacation Pay	131.83	131.83	0.00	131.83
Federal Payroll Tax	168.00	168.00	0.00	168.00
Sales Tax	0.00	0.00	11.80	11.80
Gasoline	40.36	0.00	0.00	0.00
Power Bill	752.32	623.51	259.61	883.12
Mid States Meter	275.69	0.00	0.00	0.00
TRI-STATE	88.88	0.00	0.00	0.00
Boomtown Wholesale	12.25	0.00	0.00	0.00
ED's	5.48	0.00	0.00	0.00
FmHA	$2,987.00	$2,987.00	0.00	$2,987.00
Reserve Funds	250.00	250.00	0.00	250.00
Post Office	71.50	71.50	0.00	71.50
Depreciation	$1,000.00	0.00	0.00	0.00
Past Due Bills	0.00	0.00	$1,620.35	0.00
	$8,901.07	$7,348.60	$1,891.76	$7,348.60

STATEMENT OF BUDGETED AND ACTUAL EXPENSES

WASTE WATER TREATMENT

Account	Budget (Appropriation)	Actual Expenditures	Accruals (Encumbrances)	Available (Unencumbered Balance)

STATEMENT OF ACTUAL AND ESTIMATED REVENUES

WASTEWATER TREATMENT

	CURRENT MONTH			YEAR TO DATE				
Revenue Sources	Estimated	Actual	Over (Under)	Total Estimated	Estimated	Actual	Over (Under)	Balance To Be Collected
User Charges								
General Property Taxes								
Federal Grants								
State Grants								
Septic Tank Disposal Fees								
Interest Revenue								
Rents								
Sewer Availability Charges								
Connection Fees								
Development Fees								
Special Assessments								
Other								
Total Revenue								

SAMPLE BALANCE SHEET

ASSETS

- Cash
- Investments
- Accounts Receivable
- Due from other Funds
- Prepaid Expenses
- Materials and Supplies
- Restricted Assets
- Equipment
  - less Accumulated Depreciation
- Utility Plant
  - less Accumulated Depreciation
- Construction in Progress

TOTAL ASSETS

LIABILITIES AND FUND EQUITY

- Liabilities
  - Accounts Payable
  - Due to Other Funds
  - Notes Payable
  - Bonds Payable
  - Customer Deposits
  - Accrued Liabilities
  - Reserves

Total Liabilities

- Fund Equity
  - Contributions
  - Retained Earnings

Total Fund Equity

TOTAL LIABILITIES AND FUND EQUITY

STATEMENT OF REVENUES,
EXPENSES AND CHANGES IN RETAINED EARNINGS

WASTEWATER TREATMENT UTILITY

Operating Revenues
User Charges
Septage Disposal Fees
Total Operating Revenues

Operating Expenses
Personal Services
Operations
Maintenance
Depreciation
Capital Outlay
Other
Total Operating Expenses

Operating Income

Non-Operating Revenues (Expenses)
Operating Grants
Interest Revenue
Rent
Sewer Availability Charges
Connection Fees
Interest Expense
Total Non-Operating Revenues (Expenses)

Net Income (Loss)

Retained Earnings July 1

Retained Earnings June 30

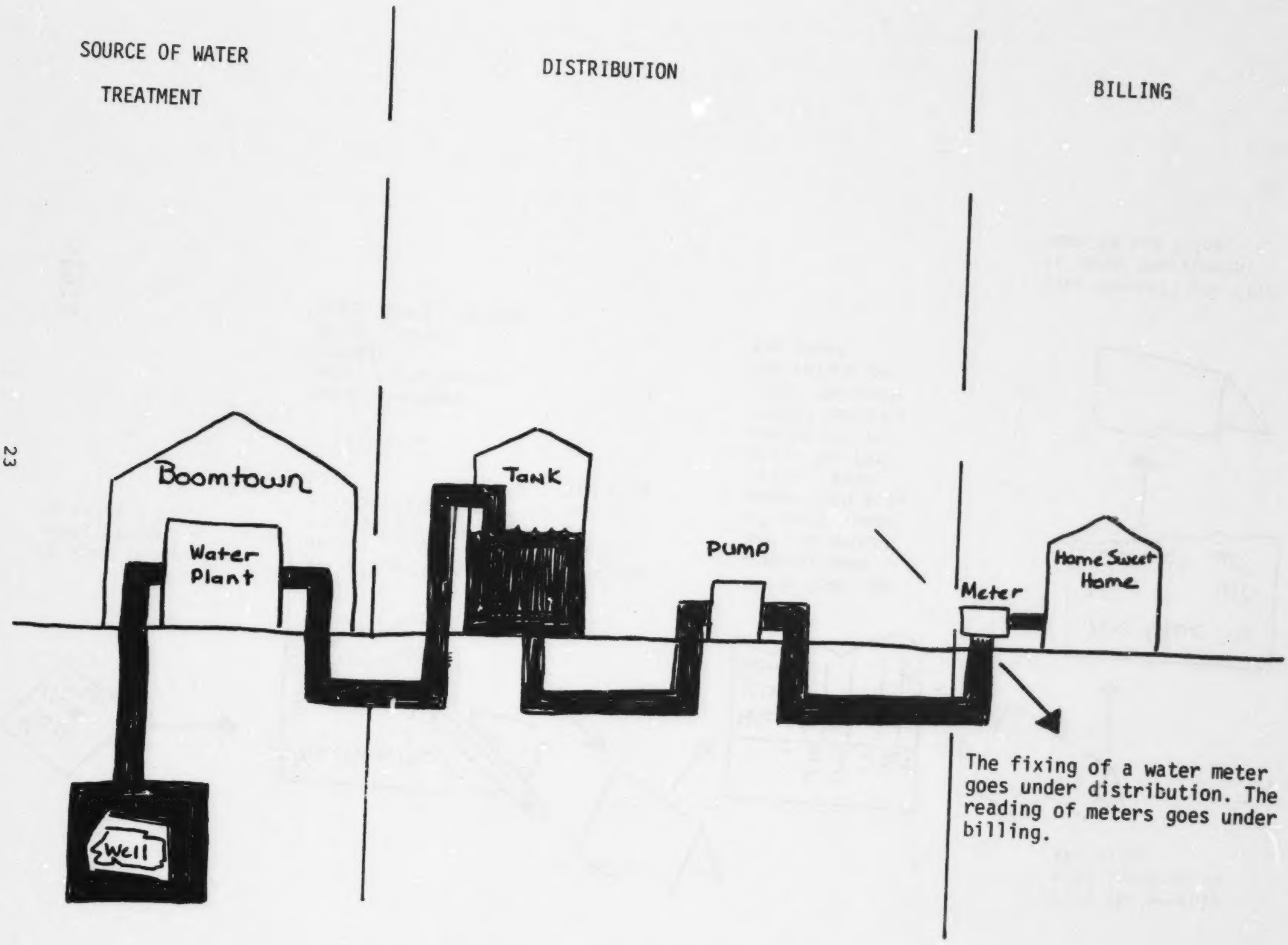
FINANCIAL MODEL

INCOME SOURCE	TO BE USED FOR	EXPENSES
WATER BILLS [1]	——	OPERATING EXPENSES LOAN PAYMENTS RESERVE FUNDS DEPRECIATION [2]
TAP FEES	——	METER INSTALLATION COSTS
DEPOSITS	——	HOLD AS SECURITY
PAST DUE BILLS [3]	——	DEPRECIATION, OR RESERVE, OR SAVINGS

1 Monthly water bills should exceed operating expenses, loan payments, reserve needs and depreciation needs.

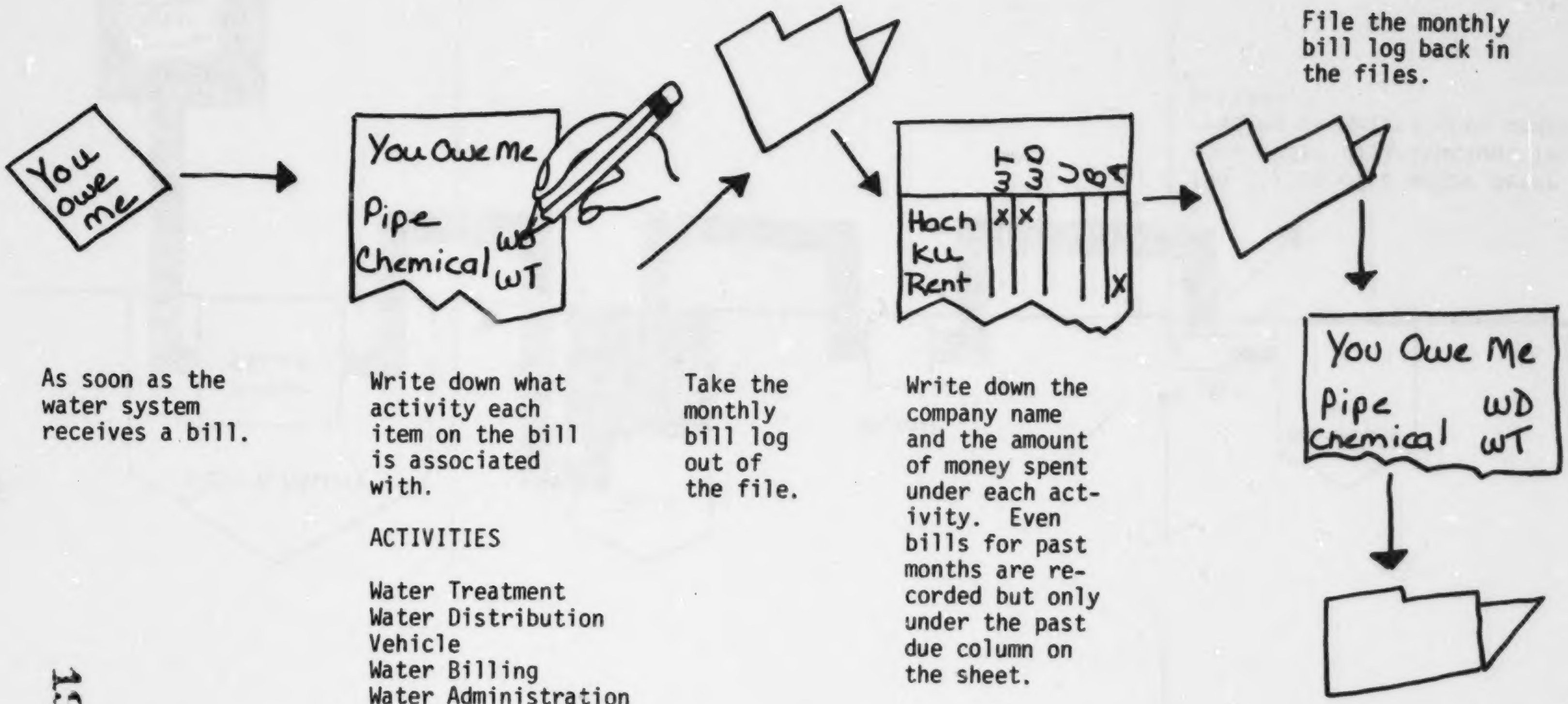
2 Depreciation is a fund to assist in financing major renovations.

3 A strong cut-off policy should be used to discourage delinquent accounts.


SOURCE OF WATER
TREATMENT
DISTRIBUTION
BILLING
Boomtown
Water Plant
Well
Tank
Pump
Meter
Home Sweet Home

The fixing of a water meter goes under distribution. The reading of meters goes under billing.

Robert Nicholas, Water Resources Assistance Council


You owe me
You Owe Me
Pipe
Chemical
WD
WT
WT
WD
CC
Hach
KU
Rent
X
You Owe Me
Pipe
Chemical
WD
WT

As soon as the water system receives a bill.

Write down what activity each item on the bill is associated with.

ACTIVITIES

Water Treatment
Water Distribution
Vehicle
Water Billing
Water Administration

Take the monthly bill log out of the file.

Write down the company name and the amount of money spent under each activity. Even bills for past months are recorded but only under the past due column on the sheet.

File the monthly bill log back in the files.

Take the bill and file it under the company name in the files.

LINE ITEM BUDGET PRESENTATION

Wastewater Treatment Utility

Objective of Expenditure

Personal Services
  Salaries
  Overtime
    Total Personal Services

Expenses
  Supplies
  Electricity
  Gas, Oil and Diesel
  Maintenance
  Chemicals
  Equipment Rentals
  Training
  Travel
    Total Expenses

Capital Outlay
Capital Replacement Reserve
    Total Utility

ACTIVITY BUDGET PRESENTATION

	ACTIVITY				
OBJECT OF EXPENDITURE	PRIMARY	SECONDARY	TERTIARY	SLUDGE	ADMINISTRATION	TOTAL
Personal Services						
Salaries						
Overtime						
Total Personal Services						
Expenses						
Supplies						
Electricity						
Gas, Oil and Diesel						
Maintenance						
Chemicals						
Equipment Rental						
Training						
Travel						
Total Expenses						
Capital Outlay						
Capital Replacement Reserve						
TOTAL TREATMENT						

HOW MUCH WILL THE FACILITIES COST AT TODAY'S PRICES?

A. CONSTRUCTION COSTS ESTIMATE

System Component	Cost	Total Cost
• **Wastewater Treatment Plant**	________	
________	________	
________	________	
________	________	
________	________	
________	________	
Sludge Handling Facilities (Year to be built____)	________	
		________(201)
• **Pump Stations**		
________	________	
________	________	
________	________	
		________(202)
• **Interceptor Sewers**		
________	________	
________	________	
________	________	
		________(203)
• **Collection Sewers**		
________	________	
________	________	
________	________	
		________(204)
• **On-site And Other Inovative Alternative Systems**		
________	________	
________	________	
________	________	
		________(205)
• **Land Acquisition**		
________	________	
________	________	
________	________	
		________(206)
• **Other**		
Inspection and Construction Management	________	
________	________	
		________(207)
• **TOTAL CONSTRUCTION COSTS (201 + 202 + 203 + 204 + 205 + 206 + 207)**		________(208)

B. ESTIMATED ANNUAL OPERATION, MAINTENANCE, AND REPLACEMENT COSTS FOR THE PROPOSED FACILITIES

Cost Categories	System Components Treatment Plant	Sludge Handling Disposal	Pump Stations	Interceptor Sewers	Collection Sewers	On-Site Systems	Total Costs
• Labor (Salaries, Fringe Benefits, & Overtime)							
- Operations							
- Maintenance							
- Management							
- Support Services (Purchasing, Data Processing, Finance, Etc.)							
Total							(209)
• Utilities (Fuel & Power)							
- Electricity							
- Fuel Oil							
- Natural Gas							
- Automotive Fuel							
- Water Service							
- Other							
Total							(210)
• Materials & Supplies							
- Chemicals (Itemize)							
- Maintenance							
- Automotive							
- Laboratory							
- Administrative Supplies							
- General							
Total							(211)
• Outside Services							
- Sludge Hauling or Disposal							
- Engineering Service							
- Data Processing							
- Other							
Total							(212)
• Miscellaneous Expenses							
- Insurance							
- Travel & Meals							
- Telephone							
- Training							
- Equipment Rental							
Total							(213)
• Equipment Replacement							
- Process Equipment (e.g., Pumps, Scrappers, Collectors, etc.)							
- Vehicles							
- Minor Miscellaneous							
- Other							
Total							(214)
• Total Operation, Maintenance, and Replacement Costs							(215)

HOW WILL THE FACILITIES BE FINANCED?

A. AMOUNT TO BE BORROWED FOR CONSTRUCTION AND CONSTRUCTION-RELATED COSTS

Grantee Share of Construction Costs

System Component	From Line	Construction Cost	EPA Share	State Share	Other Grants	Grantee Share	
Wastewater Treatment Plant	201	$_____	$_____	$_____	$_____	$_____	(301)
Pump Stations	202	_____	_____	_____	_____	_____	(302)
Interceptor Sewers	203	_____	_____	_____	_____	_____	(303)
Collection Sewers	204	_____	_____	_____	_____	_____	(304)
On-Site Systems	205	_____	_____	_____	_____	_____	(305)
Land Acquisition	206	_____	_____	_____	_____	_____	(306)
Other	207	_____	_____	_____	_____	_____	(307)
Total		$_____	$_____	$_____	$_____		(308)

Total Grantee Share
(301 + 302 + 303 + 304 + 305 + 306 + 307) $_____ (309)

Construction-Related Costs

Interest Paid on Loans and Notes $________ (310)

Repayments to Other Funds ________ (311)

Local Share of Planning and Design Costs ________ (312)

Legal, Financial and Other Fees for Issuance and Sale of Bonds ________ (313)

Other Costs (Identify)

____
____
________________ ________ (314)

Total Construction-Related Costs (310 + 311 + 312 + 313 + 314) $________ (315)

Grantee Contributions (Reduction in Amount to be Borrowed)

Accumulated Property Tax Revenue $________ (316)

Local Funds (Reserves) Available for the Project ________ (317)

Prepaid Connection Fees and Betterment Assessments ________ (318)

Other Sources of Front-End Funding (Identify)

____
____
________________ ________ (319)

Total Grantee Contributions (316 + 317 + 318 + 319) $________ (320)

Amount to be Borrowed
(309 + 315 – 320) $________ (321)

B. METHODS OF FINANCING THE AMOUNT TO BE BORROWED

Financing Method	Amount Borrowed	Interest Rate	Term of Maturity	Annual Debt Service Payment	
General Obligation Bond					(322)
Revenue Bond					(323)
Loan					(324)
Total		▨	▨		(325)

Capital Recovery Table

Length of Maturity in Years	Interest Rates in Percents								
	7	8	9	10	11	12	13	14	15
10	.142	.149	.156	.163	.170	.177	.184	.192	.199
15	.110	.117	.124	.131	.139	.147	.155	.163	.171
20	.094	.102	.110	.117	.126	.134	.142	.151	.160
25	.086	.094	.102	.110	.119	.128	.136	.145	.155
30	.081	.089	.097	.106	.115	.124	.133	.143	.152
35	.077	.086	.095	.104	.113	.122	.132	.141	.151
40	.075	.084	.093	.102	.112	.121	.131	.141	.151

200<

C. TOTAL ESTIMATED ANNUAL LOCAL WASTEWATER TREATMENT SYSTEM COSTS

- Existing Annual Operation, Maintenance, and Replacement Costs $____________________ (326)
- Discontinued Annual Operation Maintenance, and Replacement Costs to be Discontinued as a Result of Proposed Project $____________________ (327)
- Net Existing Annual Operation, Maintenance, and Replacement Costs (Net) (326-327) $____________________ (328)
- Existing Annual Debt Service $____________________ (329)
- Estimated Annual Operation, Maintenance, and Replacement Costs of Proposed Facilities (215) $____________________ (330)
- Estimated Annual Debt Service and Other Required Expenses for Proposed Facilities (325) $____________________ (331)
- Total Estimated Annual Local Wastewater Treatment System Costs (328 + 329 + 330 + 331) $____________________ (332]

D. SOURCES OF FUNDING FOR TOTAL ANNUAL WASTEWATER TREATMENT AND FACILITIES COSTS

- **Sewer Service Charges** $__________ (333)
- **Surcharge on Sewer Service Charges** __________ (334)
- **Special Assessments and Fees**
  - **Connection Fees**
    ($______ per connection, number of connections______) __________ (335)
  - **Betterment Assessments**
    ($______ per______, number______) __________ (336)
  - **Other (Describe)**
    ____
    __________ __________ (337)
- **Transfers From Other Funds**
  (Identify)__________
  ____
  ____
  __________ (338)
- **Other (Identify)**
  ____
  ____
  ____
  __________ __________ (339)
- **Total Funding** $__________ (340)

202<

WHAT ARE THE ANNUAL COSTS PER HOUSEHOLD?

- Total Estimated Annual Wastewater Treatment System Costs (332) $__________ (400)
- Nonresidential Share of Total Annual Wastewater Treatment System Costs $__________ (401)
- Residential Share of Total Annual Wastewater Treatment System Costs (400 − 401) $__________ (402)
- Number of Households __________ (403)
- Annual Wastewater Treatment System Cost Per Household (402 ÷ 401) $__________ (404)
- Other Annual Costs Per Household (Identify)
  ____
  ____
  ____________________ $__________ (405)
- Total Annual Costs Per Household (404 + 405) $__________ (406)

203<

Sources Used In Preparing This Guide

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American Water Works Association
Denver, Colorado (1982)

Comprehensive Diagnostic Evaluation And Selected Management Issues

U.S. EPA, Office of Water Program Operations
Washington, D.C. (1982)

New England Wastewater Management Guide

New England Interstate Water Pollution
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